"The majority they don't like answering": classroom discourse in Kenyan primary schools

Thesis

Submitted: February, 2002

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Doctor of Education (EdD)

Course E990

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Classroom discourse in Kenyan primary schools.

ACKNOWLEDGEMENTS

I would like to thank

Dr Janet Maybin for her constructive support,

my husband, Christopher Frost, for all his assistance,

my sister and my mother for their help in editing.

DEDICATED TO

My Kenyan colleagues and friends for their help and support throughout, especially Tom Mondoh, Alice Obuyah, James Sankale and Charles Kanja

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Abstract

'The majority they don't like answering':[1]

Classroom discourse in Kenyan primary schools.

This research addresses the role of classroom discourse in supporting children's learning in Kenyan primary schools. Using a triangulated research approach, I explored the teachers' practice and perceptions of their discourse strategies. This study involved the development of a classroom observation framework, a questionnaire schedule and a semi-structured teacher interview; this led to the generation of both qualitative and quantitative data. In developing the research instruments, I particularly reviewed the work of Flanders, Sinclair and Coulthard, Barnes, Wragg and Brown, and Hardman.

Underpinning my study was a theoretical framework of how children learn, which was drawn from the ideas of Vygotsky, Bruner, Piaget, Edwards and Mercer. A strand within this framework was the consideration of the context of learning through a second language. The ideas of Mayor and Wells, together with their implications for classroom discourse and organisation, were discussed here.

My analysis of the classroom discourse focused on the three dimensions identified by Sinclair and Coulthard: teacher initiation, pupil response and teacher feedback. Within these dimensions, my discussion considered teacher input and its combination of initiation and feedback strategies. It also considered three elements of pupil response - their nature, their length, and whether they were choral or individual. Attention was also paid to the way in which the pattern of classroom discourse ensured curriculum coverage and created a semblance of pupils' participation in the learning, which belied their actual passivity.

My study concludes with a discussion of the implications of the research findings for inservice training. Whilst acknowledging that such training alone cannot address the constraints faced in the Kenyan schools, it suggests that it has a role to play in developing teachers' professionalism and raising their awareness of their own practice and its implications for children's learning.

Study title

'The majority they don't like answering'[1] –

classroom discourse in Kenyan primary schools.

Chapter 1 Introduction

Focus of the study

This study takes place in Kenya, where I was involved in a Ministry of Education primary teacher training project between 1997 and 2001. Prior to this I had also worked in Ghana and it was my experience as a teacher-educator in both African countries, which led to my interest in the nature of classroom discourse. My work in Kenya, for the British Department for International Development (DFID), was to co-ordinate the design, development and implementation of a distance learning course for teachers, which emphasised the role of oral language in primary science, maths and English; this was part of the Strengthening Primary Education Project (SPRED).

To set the scene for my study I begin by describing a typical primary lesson which took place in a large school on the outskirts of Nairobi; this lesson is one of those observed in the second stage of my EdD study. The local catchment area consisted of slum housing, where dwellings were made of metal sheets or mud and there was no sanitation or electricity. Despite its surroundings, the overall impression of the school was that it was well-kept; classrooms were housed in permanent structures and also had windows. However, the classrooms themselves were poorly resourced, with three pupils sharing each old and worn bench seat; the only other visible resource was the chalkboard. It was a cold, dull day in July and the children were dressed in tattered jumpers which hung in threads from the elbow down.

As the teacher - a softly spoken young man - entered the class, he greeted the pupils and asked if they were ready for their maths lesson; the Standard 6 children responded in unison. The lesson began with the

teacher writing some calculations on the board and, as he wrote, he asked the pupils for the answer to each element:

T	six six multiply by thirteen
C Few	seventy eight
Teacher	seventy eight again (.) two add zero one twenty divide by thirteen how many times will thirteen go to one hundred and two?
C Few	nine times
Teacher	nine times because of?
C Few	one seventeen
Teacher	one hundred and seventeen carry eight now since this (.) you carry decimal you can just leave it there so it is seven shillings and maybe without including without this one and? seventy cents yah?
C Few	yes
Teacher	seven shillings and?
C Few	seventy cents?
Teacher	that is (.) no no no (.) this is percentage yah?
C Few	yes

(*Discount and Sale Price, L107/122*)

The above extract shows how the teacher elicited choral responses to what, for Standard 6 pupils, are low level calculations. His input varied in length, as he often elaborated on the answer given, to take the children forward to the next part of the calculation. Most of the forty-minute lesson was taken up with similar interaction, but the teacher also instructed the children to copy the calculations into their books and complete the maths exercise. This was carried out in silence; some children appeared distracted, several gazed out of the window and another flicked through his maths text book. As the children wrote, the teacher moved around the class stopping to mark his pupils' work; occasionally he said something to the children, but generally just ticked or crossed their work. When the 'end of lesson' bell rang, the children

packed up their maths books and the teacher instructed them to complete the work and to bring it to him in the staff room as soon as possible.

After the lesson I asked the teacher about the observed lesson and this interview forms part of my discussion in the analysis of my findings in Chapter 6. Although the teacher began by describing the lesson as typical, he stressed that normally he would:

> 'encourage the pupils to participate fully in the lesson'
> (*Interview, Discount and Sale Price, L300*).

Similarly he explained that he realised he should have 'reward(ed) orally' pupils who gave correct responses, but that in the observed lesson:

> 'I could not use those comments, but that is what I am supposed to do'
> (*Interview, Discount and Sale Price, Line 321*).

We also talked about issues in teaching maths, and he explained that the pupils perceive maths as a difficult subject, but he felt this was mainly because they:

> 'don't like reasoning that is the problem reasoning that is a problem they like to be given something direct'
> *(Interview, Discount and Sale Price, L375).*

Another issue was pupil understanding of the maths questions, which the teacher felt was hindered by the children's lack of English. In terms of supporting children with difficulties, the teacher said that by marking their work during the lesson he could identify any problems; these would then be addressed in 'remedial' classes after school.

This observed maths lesson and the subsequent interview highlighted a number of issues about teaching and learning in Kenyan primary schools. Firstly, the poverty of the local environment, and often of the school itself, is likely to directly affect the availability of resources for learning, the commitment of the teachers and the welfare of the children. The problems which the school faced were probably exacerbated by the national policy of teaching and learning in English; for most children and

teachers this is a second or third language. The lesson was teacher-led; it was the teacher who asked the questions, elicited the responses, and controlled the classroom discourse. Generally, the teacher elicitations appeared to make low cognitive and linguistic demands upon the pupils and their responses were most often one or two words in length. Pupil choral responses were frequent although, as the extract shows, participation of the pupils was sometimes low; this is captured in the transcript by the use of the term 'Choral Few'.

Few links were made back to the overall topic, only at the beginning and end of the lesson; instead the focus of the lesson was the carrying out of mathematical calculations. Pupils were required to listen, but also to respond to the frequent teacher elicitations, which included whole class affirmation of their understanding.

Typically the teaching and learning style of the observed lesson would, like others in similar contexts, be described as 'rote' and 'memorisation'. Children were often asked to repeat elements of the lesson and the demands made upon them suggest an emphasis on memorisation, rather than on more challenging learning approaches. However, although not denying the validity of this description of practice in developing countries, I felt that it did not fully capture the essence of classroom discourse practices. If rote learning and memorisation was the outcome of the teaching approaches adopted, I wanted to explore what strategies the teachers used to achieve this. I was also interested in whether these strategies varied, within individual lessons and across my focus subjects – maths, science and English. Similarly I questioned why teachers adopted certain discourse strategies, what they felt was their purpose and ultimately how they affected children's learning. As a teacher-educator I was interested also in exploring my findings in relation to their implication for the inservice training of teachers.

I had initially intended to explore these issues through a consideration of the impact of a distance learning programme on which I was working as an Adviser. My study was to have involved a baseline survey of some of

the existing classroom discourse practices and then a later impact study of the training course; this proposal was explored in Stage 1 of this EdD study. This focus not only reflected my interest in classroom discourse, but also built on the research which I had undertaken in Ghana in conjunction with my study of the Open University course, Language and Literacy (E825) in 1996.

However, the project on which I was working faced unforeseen delays and the implementation of the teacher inservice programme took several years longer than envisaged. This meant that I was not able to carry out an impact study of the programme as my own contract ended before this was feasible. In the light of this I modified my research focus, so that it still reflected my interest in classroom discourse but would not involve any consideration of the inservice programme. Alternatively I decided to consider classroom discourse practices in Kenyan classrooms and their implications for children's and inservice training. The research questions which formed the basis of this study were therefore:

Main research question

1. How do the oral discourse practices in Kenyan primary schools contribute to children's learning?

Subsidiary research questions

a. What is the structure and pattern of oral classroom discourse in Kenya primary schools?
b. What are teachers' attitudes towards the role of talk in children's learning and influences on them?
c. How, according to existing literature, do the observed practices support children's learning?
d. Are there ways in which the teachers in Kenyan classrooms could use talk more constructively to support children's learning?

In order to address these questions I needed to construct a theoretical framework to work within. This involved identifying the strands within the research questions and then carrying out a review of the related literature:

1. The role of talk in learning
2. Talk and learning in a second language environment
3. Oral discourse practices in primary classrooms in developing countries, particularly Africa.

The context of my research

To understand the rationale for the development of the inservice programme and the focus of this study, it is important to be aware of some of the key issues facing Kenya and its educational system. Kenya ranks 138th (out of 160) on the Human Development Index (SPRED 1999), with 47% of its population living on less than 50 pence a day and unable to meet their basic food requirements (SPRED, 1999). It is a country of inequities, with the richest 10% of the population receiving nearly half of the national income, whilst the bottom 20% receives only 3.5% (SPRED Project Proposal, 2000). Like other developing countries, Kenya has a large percentage of children; in 1994, 16% of Kenyans were under the age of five (Best, 1994). Research shows that in less developed countries such as Kenya, primary education plays a key role in development by increasing industrial productivity and agricultural innovation. It has also been shown to bring positive social changes through lower fertility, lower infant mortality, better child health and education and a reduction in gender inequality (Colclough, 1997).

Since Independence, Kenya has stressed the importance of Universal Primary Education (UPE) and made impressive advances towards it between 1963 and the late 1970s (Best, 1994). However, from that time onwards, education has declined in terms of both enrolment and quality, with enrolment falling from 95% in 1989 to around 76% and as low as 20-30% in some provinces (The Daily Nation Newspaper, January, 2000). Primary school completion rate has also dropped to 47% (National Development Plan, 1997-2001), with repetition rates of 15% - 40% (NPBS, 1999). Only 34% of the estimated 7.3 million school-aged children in Kenya can expect to complete primary education (SPRED, 1997). Of these, only 17% go on to secondary school and of all the

children who enrol in the first year of the primary school only 1.2% will go on to University.

Poor enrolment and low retention is a result of the national economic situation and was compounded by the Government's introduction of educational cost- sharing in the late 1980s. As teachers' salaries consume around 98% of the total government education budget, with the cost-sharing policy, the shortfall places a huge burden on parents, leaving them to provide all other inputs, such as books, school uniforms and school building maintenance and also to contribute to the school's overall budget (Juma and Ngome, 1998). Problems are exacerbated by the high operational costs of an overloaded curriculum, with a primary child requiring up to 13 subject textbooks in a year - a cost most parents cannot contemplate. Textbooks have been shown to be a significant determinant of school achievement in developing countries, but in Kenya more than a third of children in the final grade of primary education lack essential mathematics textbooks (The Daily Nation, March 24th, 1998).

Most schools in sub-Saharan Africa also lack physical resources and this is reflected in Kenya, where a typical school comprises eight classrooms, constructed with concrete block, metal sheets, or mud and wattle. Many schools have no permanent construction and children are taught outside, using stones as desks and large margarine tins as seats. Where there is furniture it usually consists of wooden benches seating two to three children, often the only visible teaching resources are the teacher and a chalkboard. Alongside this lack of facilities is the low teacher-pupil ratio, with many classes having 60 pupils or more; this means that children are unlikely to get much individual teacher attention (Colclough, 1997).

Difficulties are further compounded by the educational language policy where, from Standard 4 onwards, the curriculum is delivered through the country's official language - English. Although English is used in public offices and the business and commercial world, the national language in Kenya is Kiswahili. In addition there are an estimated 40 indigenous

languages, so that children often have to learn three languages. Fluency in oral and written English is seen as crucial to the country's aim for industrialization by the year 2020, yet schools are being criticised for producing 'linguistically ill-prepared people'. Senanu describes how there is a perceived lowering of standards in both written and spoken English (Senanu, 1995).

Despite the educational system being faced with many constraints, high demands are made on both the teachers and children. The situation is exacerbated by the emphasis placed on the Kenya Certificate of Primary Education (KCPE), which children take at the end of their primary schooling in Standard 8. Although the rhetoric of the Kenyan Education Master Plan, and other policy documents, supports a more holistic approach to children's learning, the achievement of individual schools and regional districts in the KCPE makes national headline news, with those not faring well being publicly berated. However, with the limited number of secondary school places available, the KCPE is a key determinant of whether children are able to continue their schooling. Sadly, the inadequate number of secondary places means that competition for them is fierce and passing the KCPE does not automatically lead to a secondary school place. For example, in January 2001 more than 50% of approximately 450,000 pupils who sat the KCPE were not successful in obtaining a secondary school place. Even those who pass well in the KCPE will not necessarily find a place, as the cut-off mark for a placement is often high; in Nairobi it was around 65% and there were many cases of children who achieved 75% or more not being allocated a place.

Faced with the demands of the curriculum and the importance of success in the KCPE, the school plays a large part in both the teachers' and pupils' lives. Days in school are long, often extending beyond the official length, with children in school from 7 a.m. and remaining until after 5 p.m. (NPBS, 1999). In addition to the long hours, children are given homework regularly, with 64.8% of the Standard three pupils being given homework around three times a week and 61.7% of the Standard 6

pupils every day (NPBS, 1999). Extra tuition, or 'remedial' teaching, also adds to the length of the school day; just over half of Standard 6 pupils have extra tuition (NPBS, 1999). Children are therefore often in school or doing homework for up to 12 – 14 hours a day, leaving them little time to play or pursue other interests; this is particularly so for girls who are also burdened with household responsibilities.

In Kenya, research suggests that quality issues in education have a significant negative impact on drop-out rate (Davies, 1992). One key aspect of quality has been identified as the teaching itself, which is dependent upon the teachers' mastery of the materials, confidence in their own ability, commitment to teaching and co-operation with each other. However, even though teachers' role in quality education may be central, it is not reflected in their terms and conditions. Teachers are poorly paid - 62% of the Ministry's National Primary Baseline sample had no electricity in their homes - this forces them to seek additional employment (NPBS, 1999). One vital source of income for teachers is extra tuition and the implications for this on the model of teaching and learning is discussed later. As well as these likely influences on their teaching practices, teachers' subject knowledge is usually only barely adequate for the task and their pedagogical skills are weak (Davies, 1992).

In addition to their being poorly paid and working in difficult conditions, there is little opportunity for teachers to undertake professional development; over 50% of Kenyan teachers have never received inservice training (NPBS, 1999), although, as Davies study shows, teachers are keen to undertake such training and respond positively to it when given the opportunity (Davies, 1992). However, those teachers who have had the opportunity to attend inservice are most likely to have participated in short courses which focus on curriculum change or examination demands, rather than on professional development or upgrading of knowledge and understanding (NPBS, 1999). The importance of ongoing professional development for teachers is endorsed

by research literature, which stresses that adequate time and resources need to be set aside for purpose (ibid, 1992).

These factors all contribute to the adoption of a teacher-centred model of delivery, where the practice is whole-class teaching, with emphasis on rote learning and cramming. If the school environment, low salaries and lack of inservice training demotivates the teachers, the level of the pupils' motivation is likely to be even lower. Pupils have to sit cramped on a bench or a stone on the floor; they are likely to be either too hot or cold, and often hungry. Lessons appear to follow the same format and children have little opportunity to share ideas or to work collaboratively. With the direct cost of schooling and the lost opportunity costs and with children in school not able to contribute to their families' livelihood, a boring learning environment is likely to add to the high drop out rate. This was endorsed by a recent Ministry report, which acknowledged *pupils' lack of interest in their schooling as one of the factors in the* decline in primary enrolment (Ministry of Education, 1997).

In summary, primary education is likely to be the only schooling most Kenyans have, and it therefore has a key role to play in equipping them both linguistically and cognitively. Lack of resources in schools and the socially and economically deprived external environment makes the role of the school, particularly the teacher, even more crucial. Yet, the nature of the classroom discourse appears to place low demands on the children, providing them with limited opportunity to develop either competence in the English language or conceptual understanding in other subjects.

The aim of this EdD study is therefore to explore in greater detail the nature of classroom discourse, to consider the rationale behind it and to discuss its likely impact on children's learning. It also intends to conclude by considering the implications of the research findings for teacher inservice training.

In this introductory chapter I have described the context in which this study was carried out and explained the role of my own interest and experience. I have also listed the research questions which formed the

basis of my research. In the following chapter, Chapter 2, I discuss the theoretical framework, in relation to children's learning, which underpins this study.

Chapter 2 Literature review

My literature review has two main focuses; the first is a discussion of the ideas which contributed to the theoretical framework for this study. These are ideas about children's cognitive development derived from the theories of Vygotsky, Piaget, Bruner and Ausubel. They place language as central to children's learning and stress the importance of children being actively involved in their own learning. Similarly they acknowledge what the child themselves brings to the learning experience and describe children's capacity to learn through instruction (Wood, 1992). These ideas are considered within the context of a second language environment and the constraints which education faces in a developing country. Most of the research on classroom interaction and its implications for children's learning has been written from a first world perspective. However, where possible I have drawn on what is still a limited, but growing, body of research relating to developing country contexts – this includes donor commissioned reviews and research studies.

The second main focus strand of my literature review, which is addressed in Chapters 3 and 4, is in relation to the research methodology which I adopted in this study. This review describes the rationale of my approach and the influence of the literature on the development of the three research instruments – the questionnaire, classroom observation and interview framework.

Language for conceptual development

It is Piaget's ideas on children's learning which provided the starting point for my consideration of the role of language in children's learning. His work greatly influenced both the theory and practice of teaching methodology; in the UK his ideas were the basis of the progressive approaches of the 1960s, captured in the Plowden Report. These ideas were also reflected in primary education development programmes in

Africa, for example the Nuffield project in the 1960s and 1970s (Pontefract, 1990).

Piaget's theories were based on his belief that intellectual growth occurs in five hierarchical stages, with progression through the stages dependent upon biological, equilibration, educational and social factors (Dasen, 1972). Within each stage of development Piaget described how the child develops a pattern of behaviour, called a 'schema' or 'schemata', through interaction with the environment. Within the early developmental stages Piaget viewed children's thinking as 'egocentric', encapsulated in a monologic mode of language (Vygotsky, 1962). This, Piaget believed, reflected children's inability to decentre and was indicative of a stage in their cognitive development - one which lay between individual and social thought (Vygotsky, 1962). In this way Piaget saw egocentric speech as a transitional stage, one which is later replaced as the child develops cognitively and is able to think and communicate on a social level (Vygotsky, 1962). Ideas of staged intellectual development have been endorsed by cross-cultural research, which showed that Piaget's stages development theory to be of universal value (Pontefract, 1990).

Piaget believed that cognitive development was fixed according to the child's developmental stage, and it was through interaction with the environment that the child's natural capacity to develop was fostered (Piaget, 1997). He was therefore critical of pedagogic practices which were based on ideas of children assimilating new knowledge through transmission, instead of by 'internal activity' (Piaget, 1997). To Piaget this was a fundamentally flawed view of knowledge and learning, one that deprived children of the opportunity to discover for themselves (Piaget, 1997). This emphasis by Piaget on the importance of children developing 'experimental' minds (Piaget, 1997) was interpreted by educationalists as 'discovery' learning. In this model of teaching and learning, children would 'discover' through action, and first-hand experience. It is this emphasis on learning through experience which, as Wells describes, has contributed to the recognition that knowledge has to

be actively constructed by each individual through interaction with the world (Wells, 1989).

However, although Piagetian ideas were of great influence on educational practice, they were also criticised in terms of the research approach adopted and the conclusions drawn. Donaldson challenged the experimental basis of Piaget's theories; in her studies she found that if children were given tasks which made 'human sense', they were able to decentre more successfully (Donaldson, 1983). She concluded that children's success in carrying out given tasks is based on the context in which they are presented and the way in which the researcher's questions are posed (Donaldson, 1978). Piaget's work has also been criticised for the implied rigidity of the developmental stages and the lack of emphasis given to the role of language in children's learning; he believed language to be subsidiary to activity. The work of Vygotsky (1962) signified a move away from ideas of children learning through action alone, to one which considered the central role of speech. Vygotsky (1962) saw the primary function of speech as being communicative, so that even the earliest speech of the child would be essentially social. Within this social context, Vygotsky suggested that language enabled children to participate 'in culturally appropriate ways' (ibid, 1962). For Vygotsky, language was one of the key 'tools' in mediating human experiences of the environment and influencing their social relationships (Tudge, 1993).

Vygotsky (1962) was critical also of Piaget's failure to acknowledge the importance of the 'social situation and milieu' to a child's development. He saw egocentric thought not, as Piaget described, as an accompaniment to a child's activity, but as an 'instrument of thought' (1962). His experimental work showed that children would engage in more egocentric talk if given a difficult task, so that the talk itself assumed a very definite function in the activity. In this way egocentric talk was not replaced by more developed forms, but served as the transition from vocal to inner speech. Vygotsky (1962) described how as the child's inner speech becomes 'stabilized', egocentric speech will diminish and within this process of intellectual development the role of the adult is

key. It is adult intervention which enables the child to operate at a developmental level beyond their individual capability (Tharp and Gallimore, 1997). The distance between what a child can achieve alone, and what they can do with appropriate support is the basis of Vygotsky's key concept of the 'zone of proximal development' (Vygotsky, 1993). The concept of the zone of proximal development is simple enough; the limits of someone's ability can be expanded by the appropriate cognitive support. The idea of support to children's intellectual development was further articulated by Bruner who talked of the 'scaffolding process', whereby an adult, or a more able peer, can provide support to a child's thinking and facilitate the move into their zone of proximal development (Bruner, 1960). Central to the scaffolding process is the role of language which becomes, as Bruner describes, a means of transforming experience, not just of representing it (Bruner, 1960).

Mercer (1994) suggests that the zone of proximal development should not be viewed as an attribute of an individual child, that is their own potential level of achievement, but as a reflection of the support offered and a measure of the strength of the cultural framework of the learning. The intellectual limits of an individual are not fixed, but will vary according to the specific task and the nature of the support given (Mercer, 1994). Vygotsky believed that the social nature of the school environment provided an ideal context for the crucial verbal interactions between the child and adult. Teachers can actively support their pupils in the development of shared understandings, experiences and conceptual vocabulary (Edwards 1990). They will thus provide a bridge between familiar skills and new ones, to enable children to arrange and structure their problem-solving (Rogoff and Gardner, 1997).

However, if, as Mercer suggests, if it is only when scaffolding is taking place that we can assume a child is working in their zone of proximal development, it is important for educators to understand the differences between scaffolding and teacher assistance. As Mercer describes, scaffolding is a form of help, but differs in that it enables the child to 'accomplish a task' that they could not have otherwise accomplished.

This will bring them closer to being able to accomplish the task on their own and therefore extends their zone of proximal development (Mercer, 1994). However, all teacher assistance cannot necessarily be construed as scaffolding, as it may only enable the child to complete a low level task. Teachers continually help children to complete all tasks, for example, correcting a misspelled word, or a wrong calculation; this is everyday assistance and is not facilitating children to operate at a higher cognitive level. In the Kenyan context particularly, teacher correction is mechanical and rarely accompanied even by verbal explanation. Pupils will therefore have little idea of what they have done wrong, or how to correct it. In this way they may be thrown into intellectual dissonance, where the strategies they have been relying upon are shown to be inappropriate, but yet they are given no alternatives to employ. Tharp and Gallimore suggest that teacher scaffolding should be based on qualitative steps, involving a range of approaches which will help the child move through the zone, from not understanding the possibilities of the task, to reaching full control (Tharp and Gallimore, 1997). Such steps, Moll suggests, would be supported by exploratory talk and other social interaction, rather than structured cues, so that the child becomes conscious of what they are doing and of the language itself (Moll, 1993).

Barnes (1990) similarly emphasized the crucial role of language in the scaffolding process; teachers will need to adopt a range of discourse practices: explaining, exploring, eliciting ideas and asking questions. Although Vygotsky himself did not specify the type of assistance teachers would give, he described how collaboration, direction and assistance through demonstration and leading questions would support the scaffolding process (Vygotsky, 1993). In this way teachers will be engaging intellectually with the child, to ascertain why they have made a mistake; this will be through exploratory talk, questions and other discourse strategies. The nature of the task itself is also important, if it to be one which extends children's zone of proximal development; Maybin (1992) suggests it should incorporate a specific learning activity with finite goals. Consideration of the task and the type of assistance are important distinctions to make.

Whatever the specific task, all learning should be a meaningful process and relate to the child's own conceptual framework. Here the ideas of Ausubel and the social constructivists form another strand in the model of learning underpinning this research study. Ausubel (1989) acknowledged the value of Piagetian developmental theories, but was critical of the interpretation of theories as unguided discovery learning. He emphasised learning was not just an addition of new information to existing information, but the importance of the teacher ascertaining what the child knows and teaching them accordingly (Ausubel, 1989). His ideas were developed by social constructivists and are reflected particularly in the work of Driver and the development of the Science Processes and Concepts Exploration (SPACE) primary science project and inservice training (Driver, 1986). Bruner suggested that by finding out and building on what children already know, any subject could be 'taught effectively in some intellectually honest form to any child at any stage of development' (Bruner, 1960:34). As Wells proposes, within a constructivist model of learning, where the value of the experience which the child brings to the learning situation is central, teaching should be reconceptualised. He suggests that it should be viewed as a behaviour which facilitates the active construction of knowledge by the learner (Wells, 1989).

Teacher questions and explanations

For the teacher to realize their central role in the scaffolding process, by building on what children know and providing them with opportunities to interact with and learn from their environment, they will need to have the requisite skills. Wells describes these skills as listening and questioning (Wells, 1995). It is through listening that the teacher can grasp the child's thinking, which enables them to either address difficulties or to present new challenges. Similarly they will need to provide a learning environment which encourages children to articulate their ideas, and here one key strategy will be effective questioning. Teacher questions have long been emphasised as central to educational practice, and McNamara suggests that views as to the nature of those questions have not changed

much in the last century (McNamara, 1981). Wood describes how teachers ask questions every two minutes, with 44% of all teacher inputs ending with a question (Wood, 1992). Accordingly, emphasis is placed on teacher questioning in the classroom discourse literature and this is reflected in the design of my classroom observation tools and discussed in Chapter 3.

The work of Sinclair and Coulthard, which has been particularly influential in relation to classroom interaction, also emphasises the role of questions in teacher initiation (Sinclair and Coutlhard, 1975). By asking questions, teachers can elicit information from their pupils, and help them to probe, revise and consolidate their original ideas. Wood also talks of the role of questions in motivating, sustaining and directing the thought processes of children (Wood, 1992). Questions can support the scaffolding process if they probe children's thinking, ask for explanations of steps taken so far, and encourage the child to reflect on their own cognitive action. Such questions would be open, in that the child shares their own thinking rather than articulates that of the teacher, but effective questions would help add structure to that thinking and provide parameters. Edwards (1992) suggests that teachers can invite elaboration, asking the child to say more about their initial response, usually referred to as 'probing'.

In a second language context, such as in Kenya, teacher questions can also support children's language development by encouraging participation and giving children confidence to experiment with language. Skilful questioning can, as Cohen and Manion suggest, perform other important functions; socially it can help to establish relationships and bring the class together (1995). Psychologically, questions can help develop a healthy emotional and intellectual climate and encourage motivation. The role of teacher questions in Kenyan classrooms was a central theme in my research and is discussed further in relation to the development of the observation schedule in Chapters 3 and 4.

However, teachers have been criticized for asking too many questions, although Mercer suggests that such research is basically flawed (Mercer, 1995). He argues that teachers' objectives will differ from those of parents and this is likely to be reflected in the language they use. The issue, he suggests, is not the quantity of questions but their nature; although questions may predominate in classroom discourse, they do not necessarily probe or challenge pupils' thinking. The limitation of many teacher questions is not that they require children to display knowledge which the teachers themselves already possess (Geekie and Raban, 1993). Rather it is, as Wells describes, that teachers ask questions so that class discussions become nothing more than a guessing game, with the teacher attempting to get a specific agenda across (Wells, 1995). Answers to these questions are 'already pre-formulated' in the teacher's mind and act 'like a beacon' in steering the discussion (Wells, 1995); in this way the questions can actually focus pupils' attention away from the emerging enquiry, towards the cues or clues which the teacher themselves are providing. Edwards describes how, if the main concern of the teacher is that the pupils guess their thinking, this is likely to affect the teacher's own listening skills. Rather than listen carefully to the children's responses as an indication of their thinking, the teacher's focus will be on listening for evidence that the children are moving towards a specific answer (Edwards, 1992). Similarly, this focus affects how the questions themselves are structured, so that only one answer is possible; this is particularly the case in the Kenyan context.

Dillon goes as far as to describe teacher questions as a means of depressing pupils' thought; he talks of how a high rate of questioning is associated with low rates of voluntary input on the part of the pupil. This means that pupils only respond to teacher questions and that the questions actually inhibit their participation (Dillon, 1978). As Wells suggests, if the teacher wants to impart information they could do so more successfully by just giving the children the information, rather than delivering it in the form of questions. This approach would allow more time for children to respond to the information and to raise questions of their own (Wells, 1995). Wood describes how teacher questions do not

always actually elicit answers; he talks of how the teachers themselves answer around 38% of their own questions (Wood, 1992). However, interestingly, this appears to be in contradiction to the Kenyan environment, where in my study the 50:50 turn-taking pattern adopted in the classrooms mean that all teacher initiations elicit a response.

Teachers' emphasis on questions is a likely reflection of their own perceptions of the educational process and their own role within it. Hargie suggests that the main purpose of teacher questions is to check on pupils' learning, and their ability to recall facts. He refers to studies which show that although 36% of teachers' input are questions, these are lower order factual and recall questions (Hargie, 1978). In the Leverhulme Primary Project twelve functions of questions were identified, under the main categories of cognitive/intellectual; emotional/social and managerial (Cohen and Manion, 1995). In the development of observation schedules for this study, the categorisation of teacher questions has been a key feature of their design; this is discussed in more detail in Chapters 3 and 4.

Edwards (1992) describes the role of questions in creating joint or shared knowledge, but suggests that more often this reflects a limited perception of joint knowledge, based on facts rather than skills and understanding. Even higher order questions, Edwards feels, do not necessarily elicit 'cognitively superior' responses, but only reflect the fact that the child has stepped into the teacher's frame of reference - not necessarily made it their own (Edwards, 1992). Another questioning strategy he suggests is maintaining silence long enough to encourage a pupil to respond more fully (Edwards, 1992). This 'wait time' is likely to be particularly crucial in a second language environment where a question can place both linguistic and cognitive demands upon the pupil. Research cited by Wragg and Brown suggested that if the teacher extends the wait time from one to three seconds, not only after the question itself, but also after the pupil's response, that the length and number of pupils' responses increased - as did the number of unsolicited, but appropriate responses (Wragg and Brown, 1993). However, as Edwards describes, wait time in

a whole class environment can seem risky to the teacher, with the fear that any break in the pattern of discourse could lead to disruption (Edwards, 1992). Such a fear was, however, contradicted by Wragg's study which indicated that wait time increased children's confidence, encouraging them to ask questions and make inferences whilst, contrary to teachers' apprehension, disciplinary problems actually decreased (Wragg and Brown, 1993).

Edwards (1992) talks of alternatives to questions and argues that, open or otherwise, they may not be the most effective means of eliciting children's thinking; he suggests that declarative statements will be more likely to invite a pupil rejoinder; although the examples he gives appear to reflect good practice in questioning strategies rather than an alternative. However, in my research I noted that although Kenyan teachers used both statements and questions, they actually serve to initiate similar types of pupil responses from the pupils. As Mercer suggests, in analysing how teachers use language it is not just the form which is important - i.e. whether an elicitation is phrased as a question or statement - but also its function and content (Mercer, 1995). Related to this is the nature of the pupil response elicited and the implications of its cognitive and linguistic demands. Similarly, questioning should be a discourse strategy practiced by pupils as well as by teachers; through formulating questions, pupils can articulate their understanding and ideas, which can support the development of their own thinking as well as scaffold that of their peers. In my observation in Kenyan classrooms, pupils never asked questions. The role of questions in classroom discourse is further discussed in Chapters 3 and 4 in relation to the development of the research instruments for this study.

Another key element of classroom discourse is teacher explanations, which can help set the learning context, provide a stimulus for discussion and summarise the concepts learnt. Wragg and Brown argue that the ability to explain something clearly is at the heart of a good teacher's professional repertoire (Wragg and Brown, 1993). They define an explanation as a strategy which can contribute to the understanding of

concepts, cause and effect, procedures, purposes and objectives, relationships and processes (ibid). Wood suggests that explanations do not have to consist of purely factual input; they can involve telling an anecdote, or sharing an experience, or by acting as the non-expert (Wood, 1992). Or, they can draw on children's own experience and help them to relate new knowledge or information to something they already know and understand. Brown describes an effective explanation as a clearly structured series of linked statements, where central concepts and principles are flagged up (Brown, 1978). One issue in the effective use of 'keys', however, is that the teacher will need to be confident in the subject matter. In a context such as Kenya, where - as mentioned in Chapter 1 - the academic level of the teachers is low, this is likely to inhibit their ability to structure and sequence their explanations appropriately, or to flag up the key principles and concepts.

Another factor in delivering effective explanations is the appropriate use of voice and gesture and the use of supportive teaching aids (Wragg and Brown, 1993). Short simple sentences and use of prepositional phrases, varied speed of delivery and the use of pauses, were found by Brown to distinguish a good explanation from a poor one (Brown, 1978). However, as Brown discusses, a key indicator of a good explanation must also be the degree of understanding it generates in the pupil (Brown, 1978). Therefore, any study of classroom discourse should involve a consideration of the teacher explanations and their likely impact on the children's thinking (Wragg and Brown, 1993). Explanations, like questions, should not be the prerogative of the teacher; children too need to be given the opportunity to explain their thinking to the teacher and to each other. It is the nature of teacher elicitation and the way in which the children's learning is organized which will provide such discourse opportunities and this is explored in the following section on classroom organization and differentiation.

The role of classroom organisation

Some models of class organisation can actually hinder or prevent children from experimenting with language or trying out ideas. Wood describes how pupils' response to a question will depend on whether it is addressed to the whole class, a small group, or to an individual (Wood, 1992). Whole class teaching, where the teacher has the central role, is seen by Wells to imply a lack of understanding as to the active and collaborative nature of learning by reflecting a transmission model of education. This model of teaching and learning can constrain the children's language and intellectual development, whereby they are not able to participate in, or to be challenged by, a range of discourse. Similarly, a whole class focus to lessons means that both the cognitive and linguistic level is likely to be inappropriate for many of the children; in this way it cannot support the individual needs of learners.

However, whole-class approaches are more likely to children's learning if teachers raise questions which probe and scaffold the thinking of individual learners. They can also try to organise the class to facilitate peer group support and collaborative learning and cater for the needs of individual learners, through the support they give and the differentiation of tasks. The value of children working collaboratively has been acknowledged by educationalists for many years. Although there may have been disagreement as to what constitutes collaborative work, or the relative weight it should be given, there is a general consensus that collaboration can help support children's cognitive, linguistic and social skills. Collaborative learning is usually supported by the organisation of the classroom to facilitate group work. Research in both America and the UK endorses this, citing children's higher achievement when they work in groups (Galton and Williamson, 1994). Wells' Bristol study suggests that one-to-one or small group can play an active role in developing children's language and thinking skills. These approaches help support children's innate predisposition 'to make sense of their experience, to pose problems for themselves and actively search for and achieve solutions' (Wells, 1985). Although Vygotsky did not consider the

organization of learning, his emphasis on the role of social interaction in developing a child's linguistic and thinking skills also implies that learning should involve collaboration.

Through group work, teachers can more easily engage in interaction with pupils and help them to acquire a procedure, knowledge or a skill that will be useful in other situations. The teacher's role is to provide input which is responsive to the needs of the pupil, and to achieve this they need to be able to observe and to listen in order to glean some understanding of the pupils' thinking (Wells, 1989). Pupils develop ownership of the task when the teacher listens, observes and assists the children to move into their zone of proximal development. In this way, as Wells argues, collaborative talk not only facilitates the carrying out of the learning task, but will also empower the learners (Wells, 1989). Group work can not only support intellectual development, but, as Lyle (1993) suggests, can also raise children's self-esteem and motivation and increase what Lyle describes as their readiness to learn. Even 'off task' talk in groups can contribute to children's understanding and their cognitive and social development (Hass Dyson, 1994). Grouping can also be a strategy to support the differentiation of children's learning; it can enable the teacher to give tasks of appropriate level to groups. It can also encourage peer support and provide the time and space for the teacher to support the needs of individual learners.

Research also suggests that within a second language environment, group work can actively contribute to pupils' language development, providing them with the opportunity to negotiate the language they hear. It can also free them from the stress and pace of the teacher fronted classroom (Rulon and McCreary, 1986). One issue, however, in a second language context such as Kenya, is how to create an environment for meaningful group discussions in a language which is not the Mother Tongue of either the children or the teacher. This places an even greater challenge upon the teacher to organize and facilitate effective group work. Their role will be to plan appropriate tasks - those that promote problem solving and action - which, Wells suggests, generate a higher level meaningful

discussion (Wells, 1989). Galton and Williamson agree that more abstract tasks provoke the most 'sophisticated' exchanges, although these will occur less frequently than exchanges supporting action tasks (Galton and Williamson, 1994). It will be the role of the teacher to help children to forge links between the concrete and the abstract, and to support the scaffolding process; in the Kenyan classroom this will both in relation to their cognitive and linguistic development. Lyle emphasises the importance of group tasks which stimulate children to 'pose questions, make observations, contribute opinions', all discourse practices which will empower them to see themselves as 'responsible learners'. This process facilitates children to work at the 'edge of their understanding' (Lyle, 1996). Children working together will generate collaborative talk, which will empower them, so that their language becomes a 'set of resources to be drawn upon' when the child is carrying out the activity (Wells, 1995) and has a purpose and function. A child will also often relate to another child's difficulties more than a teacher will and can therefore help modify, or alter, confused or misleading concepts. Cognitive conflict can stimulate children's reasoning and help them to decentre to assimilate another perspective (Open University, 1994).

However, teachers' interpretation as to what constitutes collaborative classroom work may vary (Bennett, 1983). In organizing group work, teachers will need to consider the clarity of task, the group composition and their own role in planning and supporting the task so that it encompasses clear educational purposes (ibid, 1996). Yet some teachers place greater emphasis on the organization of the seating, rather than on the nature of the task and the discourse it will stimulate. Galton and Williamson's (1994) study suggested that often the opportunities which group work presents to scaffold children's thinking may not be realized. They found that teachers' input to group work tended to be low level, focusing on organisational issues and the checking of answers, with 40% of teacher-pupil exchanges lasting less than five seconds. Lyle's work (1996) similarly highlighted how tasks set by teachers in Britain did not provide enough communicative opportunities.

The way in which teachers organise for learning and their own educational practice will, as Edwards and Mercer suggest, be based on ideological assumptions about the educational process. Some teachers may emphasise discovery learning, pupils' skills and the personal and social development of the child, others may stress curriculum coverage, knowledge transmission, or classroom control. (Edwards and Mercer, 1995). In Kenya, the way in which the teaching and learning is organised suggests that the emphasis is on knowledge transmission and classroom control. Maclure (1994) describes these practices as 'oracy for cultural transformation' and this is discussed further in the following section.

The cultural context of classroom talk

Advocates of oracy for cultural transformation challenge the often entrenched discourse structures which they feel render children passive recipients of pre-digested knowledge and deny them the opportunity to be active learners (Maclure, 1994). Yet, as Fairclough (1989) discusses, classrooms are a microcosm of the wider society, and social and cultural inequities will be perpetuated through the classroom discourse. Teachers, he argues, are representatives of their culture and, as such, agents of the society. Both they and the pupils will draw on their institutional knowledge to make sense of discourse and enter it, thereby ensuring its continued existence. Fairclough suggests that to understand classroom discourse it is therefore necessary to look at both the immediate context of what has just happened and also the wider context of the relationship between teacher and pupil, which will mirror social structures (ibid 1989). One key element in classroom discourse is the hidden pedagogy which is drawn from teachers' own experience, the expectations of pupils, teachers and the wider community; this places an emphasis on establishing and maintaining classroom control (Denscombe, 1982). For teachers in the west this control will be achieved within the context of a child-focused philosophy, and is therefore likely to be, as Fairclough describes, through consent rather than coercion (Faircough, 1989). Teachers will use discourse strategies such as questions as part of their 'discursive weaponry'; these serve to

ensure pupils' compliance for their subject position (Edwards and Mercer, 1995). Through questioning teachers can control the topics discussed, direct their pupils' thought and action and establish shared attention, joint activity and common knowledge (ibid, 1995).

Underpinning this emphasis on teacher questions is what Edwards and Mercer (1995) describe as one of the basic assumptions of classroom talk - that the teacher knows all the answers; similarly, the teacher's repetition of a question implies a wrong answer has been given. Even where the ethos of the teaching and learning is 'progressive' with questions viewed as vital to stimulate pupils' thought, they may be presented in such a way that the child is guided to achieve the 'right' answer. Unwittingly the teacher is restricting or controlling the talk, and not providing the children with the opportunity to 'scaffold' or challenge the ideas of their peers (ibid, 1995). Classroom discourse therefore reflects the adherence to educational 'ground rules' which reflect the external culture and the educational and social environment. Edwards and Mercer (1995) explain how these rules are reflected in teachers 'pseudo questions', their control over turn-taking, and the dispensing of approbation to pupils answering questions. However, they argue that it is not the existence of 'ground rules' which is in itself problematic, but the implicitness of these rules. Through the implicitness of such rules they suggest that incorrect assumptions can be made about what is shared knowledge and understanding (Edwards and Mercer, 1995).

Classroom interaction can become a collusion, reflecting the asymmetrical relationship between the teacher and the child (Edwards, 1990). This collusion can lead to educational failure, where the knowledge gained is 'ritual' rather than 'principled'. Procedural knowledge is knowing what to do and what to say and, as Edwards and Mercer 1995 suggest, it does have its place in learning. However, it cannot substitute for principled knowledge which reflects a conceptual level of understanding. It is principled learning which will support an in-depth understanding of the validity of conclusions in their own right, not just pupils answering questions according to the teacher's requirements.

Distinguishing between ritual and principled knowledge requires a consideration of the relationship between the conceptual understandings possible within the lesson and the practical activities and discourse which occurs (Edwards and Mercer, 1995).

In Kenya, the wider social and cultural ideology defines the asymmetrical relationship between teacher and child even more explicitly. Culturally, as in other developing countries, it is not appropriate for children to speak out to adults, rather it is adults' role to 'instruct' and the teacher is the transmitter of knowledge (Fang, 1996). Children in developing countries are likely to be compelled to follow instructions, with teachers making constant checks to ensure that they are being adhered to (Ogadhah and Molteno, 1998). If pupils do not comply, they are punished - and physical punishment is still the practice in many developing countries. As Rowell points out, although the prevalence of didactic practices - reflected in teacher-fronted classrooms, an emphasis on rote learning and the threat of punishment - has been noted for many years in developing countries, little has changed (Rowell, 1995). The ethos of the classroom is such that children will not attempt to share their ideas in class or to experiment with the English language. This learning climate will, as Maclure describes, not only restrict a child's 'personal growth', that is their creative, imaginative, expressive, social and intellectual development', but it can also prove to be a barrier to their learning (Maclure, 1994).

Issues of personal growth cannot usually be separated from issues of equal opportunity, whereby all children irrespective of their gender, social class, or ethnicity feel free to participate equally in classroom discourse. Research in the west has highlighted classroom inequities in relation to gender or ethnicity. Teachers may focus on the boys, for example, often for reasons of discipline, asking and encouraging them to respond to challenging questions (Swann, 1994). In this way boys are more actively and intellectually involved in classroom learning, and also gain experience and confidence in speaking in public. However, in Kenya gender inequality appears to exist more at the macro level, in

relation to enrolment figures and drop out rates, particularly in the Northern, Muslim areas of the country, where girls' enrolment is much lower. Within the primary classrooms observed in this study, gender disparity, in relation to the opportunity to contribute to the classroom discourse was not seen to be an issue. In the existing pattern of classroom interaction there is limited participation of both girls and boys which, as Bunyi noted, teachers ascribe to children's overall lack of confidence in speaking English (Bunyi, 1997). Lack of pupil participation is, however, more likely indicative of the type of teaching approaches used and the general ethos of the classroom. Ogadhah and Molteno (1998) suggested that practices such as rote learning may stem from the traditional approaches used for the reading of scriptures and for religious education, although in many colonised countries such as Kenya, they are also likely to stem from the earlier model of education imposed by the colonialists. However, as Ogadhah and Molteno (1998) point out, tradition and culture have often been used as weapons against change, both internally and externally; they suggest that a determined respect for tradition and culture can actually be patronizing. With new knowledge, traditional ideas can be effectively challenged, particularly if tradition is shown them to be detrimental in some way (ibid, 1998). A central consideration in reviewing any educational practice, traditional or otherwise, must be its effectiveness for supporting children's cognitive or linguistic development and ultimately in helping to realise the country's own national aims and vision. As discussed in Chapter 1, in Kenya the low level of literacy in the English language, poor performance in other core curriculum subjects and the high drop-out rate, suggests that the educational practice is not contributing to either individual or national development.

Teaching and learning in a second language environment

As mentioned in the last section, Kenyan teachers often ascribe the limited participation of children in classroom discourse to their overall lack of confidence in speaking English (Bunyi, 1997). Lambert discusses

how language learners may be reluctant to speak out in whole class situations when there is a deficit, or 'subtractive', model of bilingualism. This, he explains, can occur when the child's home language has a lower status than that of the language of education. (Lambert, 1994). However, this rationale would appear of less relevance in Kenyan classrooms, where pupils and teachers usually share a Mother Tongue. The issue in low participation, Brock-Utne (2001) argues, is that learning in a third language is a major barrier to children' learning; this is a problem long recognised:

> **'it is has always been felt by African educationalists that the African child's major learning problem is linguistic. Instruction is given in a language that is not normally used in his immediate environment, a language which neither the learner nor the teacher understands and uses well' (Brock-Utne, 2001)**

A debate on the policy issues relating to the language of instruction in contexts such as Kenya is, however, beyond the remit of this study. My focus is the influence of learning through English on classroom discourse and its implications for children's learning. Mayor describes the crucial distinction between learning a first and second language in being that the child is surrounded every day by linguistic input in the first language. This exposure supports the simultaneous learning of both the general and the specific processes, whereas in second language these two processes are separated (Mayor, 1994). However, one advantage for second language learners noted by Mayor is that they have an existing linguistic system which will support their understanding of the nature and structure of language (Mayor, 1994). Whole language advocates argue that there is only one language learning process, whether in school or out, and that, although second language learning is facilitated by the "advanced knowledge" of the first language, the process of learning is no different (Goodman and Goodman, 1993). Bruner suggests that even in first language development - where humans have an innate propensity to language through the Language Acquisition Device (LAD) - becoming competent is more than a question of exposure to language. He describes the need of a support system, where the adult negotiates with the child

language learner, rather than 'showers' them with spoken language (Bruner, 1994).

Exposure to oral language and opportunities to experiment with it will be particularly crucial in the second language-learning environment of Kenya. However, poverty in Kenya will mean that there are few televisions or radios and that the only exposure to English for many children will, therefore, be provided by the school, making its role even more paramount. To support children's learning, teachers will need some understanding of the similarities and differences between learning a first and second language and how to promote second language development. Teachers can provide opportunities for children to experiment with language through classroom interaction and help to facilitate links between the child's conceptual understanding and their second language development (Mauro and Pontefract, 1995). Similarly opportunities for egocentric speech, which supports the development of cognitive understanding and leads to inner speech (Vygotsky, 1962) is also likely to also support the development of a second language.

Children learning through a second language will also need to gain competency within the different functions of language. Halliday describes seven such functions: the instrumental for making requests, the regulatory, the interactional, the personal to express individuality, the heuristic to ask how and why questions and the representational, which is a means of communicating or expressing ideas or propositions (Halliday, 1973). Bernstein's belief that educational failure is often language failure, in that the child has a restricted code of language (Bernstein, 1973), is particularly pertinent in the Kenyan environment, where the task of developing these models of language in English will fall even more to the teacher. This will be through their own speech and the questions they ask, as well as through the design and the demands of the tasks they set.

Another issue in supporting second language learners is for teachers to understand that the 'interlanguage', that is the errors which the children

make as they try to make sense of the new language, is an important stage of their learning (Mayor, 1994). Similarly, the use of Mother tongue, by both the teacher and pupils, can contribute to children's conceptual and linguistic competency and help them to gain confidence. Brock-Utne describes how the earlier tenets of language learning, which stated that English is best taught monolingually, have long been challenged (Brock-Utne, 2001: 38). She also talks about how it is now widely accepted that children should be fluent in their Mother tongue before learning a second language (ibid, 2001); this is reflected in the Kenyan education policy which states that children in Standards 1-3 should learn in their Mother Tongue. However, as discussed earlier, this policy is often not adhered to. Similarly, in my observation there was little evidence of the teachers using Mother Tongue, or code-switching, to support children's understanding and conceptual development.

As Mayor (1994) discusses, in learning through a second language children will need to be able to experiment with language and take risks, on the 'principle that fluency is more likely to lead to accuracy and not vice versa' . If they are to operate successfully in the second language environment of Kenyan classrooms, pupils must be given opportunities and the confidence to actually experiment with oral English. Yet, even in countries where children are operating within a first language environment, research suggests that opportunities for pupil talk are limited. Wells' study showed that two-thirds of classroom speech in Britain is produced by the teacher (Wells, 1995). As Wells describes, it is not just an issue of increasing the volume of pupil talk, but also its quality. In supporting learning through a second language, equal emphasis will need to be placed on both the content of what is communicated and on the development of the necessary thinking processes' (Wells, 1989).

It is here that the main tension lies, between the didactic nature of the teachers' discourse, with its lack of opportunities for children to work in groups and experiment with English, and the ideas of language development expressed by Maclure, and others. One reason why, despite

educational rhetoric, teachers continue to operate within a culturally traditional model of educational practice, is that teacher education fails to effectively challenge current practices. Tharp and Gallimore suggest teachers in the 'west' do not conduct what they describe as instructional conversations, or extend the children's zone of proximal development, because they don't know how (Tharp and Gallimore, 1997). Teachers in Kenyan schools are, however, faced with the additional challenge of supporting children's learning within a second language environment; this places even more importance on teacher education.

Teacher education in Kenya

Students commencing their studies in Teacher Training Colleges will be likely to have their own, often entrenched, ideas as to the nature of teaching and learning, reflecting the influence of cultural and social ideology. It is these implicit beliefs about how children learn and the role of teachers which, as Edwards and Mercer suggest, have a strong influence on classroom discourse (Edwards and Mercer, 1995). Hollingworth describes how in teaching college the perspectives of trainees will 'serve as culturally based filters', to help them make sense of their role as teachers and of the teaching and learning environment. He suggests that initial teacher education should try to address and challenge the student teachers' existing ideas in order to prevent the didactic practices being perpetuated (Hollingworth, 1989). However, as Fang discusses, there is a lack of emphasis in research given to teachers' beliefs, particularly in developing countries. She suggests that better understanding of these beliefs could help to improve the quality of education (Fang, 1996).

In my experience of working in Kenya I found that the teacher educators express disappointment that the newly trained teachers cast away the college theories as soon as they enter schools. Yet, there are several issues here, one, as Perraton (2000) describes, is the psychological distance between colleges and the schools. College trainers are likely to have only limited experience of primary teaching and their advocacy of

child-centred approaches are most likely to be a 'mass of platitudes' (Jones, 1997). Another issue is the low academic entry point of teacher training colleges, as highlighted in Chapter 1, which means that their focus is more a continuation of students' academic development than a professional training (Sankale, 2000). My own experience suggests that this is reflected not just in the curriculum of the college, but in the day-to-day practices, where college students wear uniform, sleep in dormitories and bells are rung to mark the end of lessons. Teaching in college appears to follow the same pattern as that observed in schools, with teacher-fronted lessons giving little opportunity for discussion or sharing of ideas. When teaching practice does take place in the second year of college, lack of funds means that college tutors are often unable to provide face-to-face support to the students. It has been suggested that it is not so much what teacher training colleges do, but what they fail to do - they fail to counteract beliefs about authoritarianism.

Even if within this context, college did manage to challenge teachers' existing ideas and motivate them to try out more progressive practices, once in school the newly-trained teachers will want to fit into 'the dominant ethos of the school'. With the cultural hierarchy which exists in developing countries the status of new teachers will, however, be low and it is therefore unlikely that they will be in a position to act as 'agents of change' (Perraton, 2000). With the constraints faced by teacher training colleges and the existing attitudes in schools, the onus falls on inservice training to provide a means of challenging entrenched ideas about teaching and learning. Lifelong learning and the importance of professional development for teachers has long been acknowledged; it was emphasised by UNESCO in the 1970s as the way forward for developing countries trying to achieve Universal Primary Education (UPE) (Crossley et al, 1985: 122). However, as discussed in Chapter 1, in contexts such as Kenya the majority of teachers have little opportunity to participate in inservice (NPBS, 1998). Ministry initiated inservice is likely to focus on addressing issues such as poor exam performance and changes to the curriculum, rather than challenge teaching and learning practices (Greenland, 1983). Inservice has also long been criticised for

its didactic, overcrowded presentation (Dove, 1986:238). Too often course tutors will adopt a 'how to be a good teacher' approach and do not invite teachers to participate and to think through issues (Greenland, 1983:94). Another constraint placed on inservice is that it may take place out of school hours and involve teachers travelling to resource centres with no compensation for expenses incurred (Greenland, 1983).

Increasingly the responsibility for professional development through inservice, has lain with donors or Non-Governmental Organisations (NGOs). These courses are more likely to address professional issues and to advocate child-centred practices. However, although funding might not be a constraint, the impact of these inservice courses will depend upon other factors. Course designers are likely to be faced with the tension between the successful implementation of the donor funded project, in terms of it reaching the targeted numbers within a specific time frame, and its sustainability. Existing educational systems are often viewed by the inservice providers as inadequate or too bureaucratic, and as a result may be by-passed in the programme design and implementation; this can greatly weaken the impact and sustainability of the inservice. Good course design can similarly be negated by adopting a 'cascade' approach to the training; in this way the training is cascaded through various cadres to the target group – the teacher. As Hawes described, the problem with the cascade system can be that those at the bottom don't get wet (Hawes, 1990). A study carried out by Andrews and Housego (1990) concluded that more effective inservice methods combine central and local support. This is through central initiatives, the use of local teachers' centres and school-based approaches - including the observation of other teachers and exchange visits.

Limitations in the design and delivery of inservice programmes are also compounded by the failure to sufficiently acknowledge the reality of Kenyan classrooms, with their lack of resources and large number of pupils. Rowell (1995) criticises 'exhortations to change' to both teachers and educational systems for failing to take into account these social and economic factors. Guthrie (1990) suggests that it would be more

appropriate if inservice in developing countries sought to improve formal teaching, rather than what he describes as placing a double burden on teachers by requiring fundamental changes to their teaching. However, teaching does not have to be viewed as a polarisation between child-centred and traditional methods, and inservice training should enable teachers to interpret more 'progressive' methods within their own local context. In Chapter 7, I discuss the implications of my research findings for the design and implementation of inservice training.

Summary

In this Chapter, I have described how the focus of my EdD research study was the discourse which takes place in the primary classrooms of a developing country, Kenya, and its role in supporting children's learning. I discussed my theoretical framework, which was drawn from the ideas of Piaget, Vygotsky, Bruner, Ausubel, Edwards and Mercer, and Maclure, where learning is construed as an active and meaningful process in which language plays a central role. I talked also about the key role of the adult, specifically the teacher, in supporting children's conceptual and linguistic development; this will be through the raising of higher order questions to challenge and probe the child, and ultimately scaffold their thinking. Teacher explanations are also seen as a means of supporting children's learning, if they present key concepts clearly and sequenced and opportunities are given for children to raise questions.

In my theoretical framework I suggested that children need opportunities to interact with their teacher and their peers, so that they can try to articulate their actions and thoughts (Wells, 1985). Similarly, teachers with some understanding of the similarities and differences between first and second language acquisition will be better equipped to ensure that there are opportunities for children to experiment with both language and conceptual thinking. The environment in which this learning will take place will be one where the pupils feel confident to make mistakes in language, and to ask questions; it will be built within a classroom ethos

of 'trust, mutual respect and a commitment to learn from each other' (Coles, 1995).

In the following chapter, I go on to describe the second strand in my theore-tical framework; this relates to the development of the research instruments.

Chapter 3 Research methodology and Stage 1 of instruments

In this Chapter I describe the second strand of my literature review and its influence on the research methodology for this study. I discuss the contribution of the literature review to the design of the three research instruments and their development in Stage 1 of this study. Central to the research was the classroom observation; producing a meaningful analysis framework was the most demanding and time consuming aspect of this study. This is discussed in detail in relation to Stage 1 in this Chapter, and in Stage 2 in Chapter 4.

My central research question explores the role of oral discourse practices in Kenyan primary schools in supporting children's learning. Subsidiary research questions relate to the current structure and pattern of classroom discourse, and a consideration of teachers' perspectives on talk in learning and the implications for inservice training. As discussed in Chapter 1, in order to address these questions I needed first to construct a theoretical framework for my research through a review of the literature. Most of the literature on discourse strategies and their analysis through the development of research tools was from a first world context. With the distinctive features of discourse in Kenyan classrooms, the challenge I faced was to design an observation framework which would provide meaningful data and facilitate an exploration of these discourse practices within the context of the theoretical framework.

Firstly, I needed to determine whether my research approach should encapsulate qualitative or quantitative features, or be a combination of both. As I wanted to explore the nature of educational phenomena rather than test a hypothesis, a qualitative approach to the observation was deemed the most appropriate (OU 1996). Qualitative research is described by Denzin as a 'frame of mind', or an orientation and a commitment to studying the social world in certain ways (Denzin, 1995). However, its critics suggest that its scale and in-depth focus on a few

situations means that it lacks 'generalisability'. However, this criticism can be challenged by the premise that generalisability depends on more than the sample size; even single case studies can provide a depth of understanding which can contribute towards generalisability (OU 1998). Guba and Lincoln suggest that the term 'fittingness' may be more appropriate than generalisability, where the findings of small scale research are explored in relation to how they fit in relation to a broader context (Guba and Lincoln, 1993). Fittingness seemed an appropriate ideal for this study where the nature of the Kenyan educational system, its national curriculum and whole class approach, suggests that even a small classroom observation sample and interview could highlight issues of a broader significance. However, to complement the smaller qualitative observation sample I decided to adopt a more quantitative approach in exploring teachers' perceptions as to their discourse practices. Through a questionnaire I could review the ideas of a much larger sample of teachers, and carry out a statistical analysis of their responses.

Dunkerton suggests that adopting a triangulated research approach will present different perspectives and these will help to avoid 'premature closure' of the research (Dunkerton, 1981). Galton and Delamont describe three types of triangulation in research methodology: the 'between method' where the same area is explored through different methodology, the 'investigator approach' when a number of researchers undertake the same research, and the 'within method' which involves a triangulation of the data generated by one research instrument (Galton and Delamont, 1985). In this EdD study I adopted from the onset a 'between method' research triangulation, based on the three instruments developed – the classroom observation schedule, the questionnaire and the interview framework. However, as Galton and Delamont point out, the gathering of more than one type of data does not necessarily help to 'reconcile competing paradigms' (ibid, 1985). It also can place greater demands on the researcher; through the designing of different instruments to support a triangulation of data, the logistical organisation of diverse research activities and the process of analysis, which involves

cross-referencing of the data. Another key issue in adopting a triangulated approach is the relative weight to assign to the different data, that is if all data should be treated equally, or one source given greater weight than another. For example, either the qualitative data can be considered more central to the study, with the quantitative data used to reinforce it, or alternatively the qualitative data may be used to help flesh out or humanise the quantitative data (Galton and Delamont, 1985). In this study the research questions focus on the classroom discourse practices and therefore the data generated by the observation framework was considered most central, with the questionnaire and interview helping to provide a contrast between teachers' practice and their perceptions. In reality, however, each of the three sets of data gained dominance as they were analysed and it was only after their individual analysis that the relationship between the three could be more clearly defined.

In designing an observation schedule for this study I was faced, as discussed earlier, with the tension between having mainly first world literature on classroom discourse to refer to, yet needing to identify meaningful categories of analysis for the Kenyan context. Another issue was the type of observation framework to adopt, from the most systematic to that of participatory ethnography. Ultimately, however, it is the overall focus or goal of the research which will determine the research method adopted. Mercer suggests that a more qualitative focus on classroom discourse is likely to provide richer detail of what is said and the context in which the discourse takes place (Mercer, 2000). Alternatively a quantitative approach will generate data, usually in relation to the occurrence of certain pre-determined types of classroom discourse (Delamont and Hamilton, 1975).

However, the relationship between the two approaches is not necessarily the dichotomy that is sometimes implied, but can be a result of restrictive definitions of either terms (OU, 1998). As Hargreaves suggests, the three 'great traditions' of studying classrooms, that is systematic observation, ethnographic and socio-linguistic research could be 'cross fertilised' with

each other (Delamont and Hamilton, 1975). In determining how to study discourse in Kenyan primary classrooms, I needed to review the strengths and weaknesses of the different methodologies and the assumptions they made about the nature of talk (ibid). As Hamilton and Delamont suggest, whatever approach is used, the researcher needs to be 'scrupulous in discovering the limits of' the technique' (Delamont and Hamilton, 1975).

In order to address my main research question on the role of talk in children's learning in the Kenyan context, I wanted to explore the structure and function of the talk, as well as its nature and content. My observation framework therefore had to generate the richness of data which a more ethnographic approach would provide, but also support a consideration of the overall pattern and structure of the discourse through more quantitative data. My starting point in the design of the schedule was a review of the work of key contributors to the field of classroom observation, such as Flanders (1967), the ORACLE Project (1985), Sinclair and Coulthard (1975), Barnes (1990), Edwards and Mercer (1995) and, more recently, Hardman's work (1999) within the Kenyan context. An understanding of the earlier work, such as Flanders and the ORACLE project, was central in providing a critical foundation from which to consider more recent developments in the field of classroom observation. As Mercer argues, even those views with which you disagree can play a very important role in shaping your own thinking (Walford, 1991). This review and its contribution to my own research study is therefore discussed in this section.

The emphasis placed on Flanders' Interaction Analysis Schedule (FIAC) in the 1970s and 1980s reflected the overall dominance of the systematic approach to classroom observation (Delamont and Hamilton, 1975). The FIAC was not only the focus for much specific criticism, but its wider impact initiated a more general discussion on the merits and demerits of 'coded' classroom observation. Its classification system was based on Flanders' belief that children learn best when their intellectual freedom is maximised; this occurs through 'indirect' teaching - the asking of questions, acceptance of pupils' feelings and ideas praise and

encouragement. Alternatively, Flanders considered 'direct' teaching, when the teacher directs or criticises (Amidon and Flanders, 1967), restrictive to children's development. This distinction between the two teaching types has been criticised for its conceptualisation of classrooms and its limited view of talk, where its role in the negotiation of meaning is not considered (Adelman and Walker, 1975). However, all schedules with pre-determined codes will ultimately reflect the originator's ideas of what constitutes good and bad classroom practice. Sinclair and Coulthard (1975) criticised Flanders' codes for their inconsistency which, as they point out, relate to both specific linguistic data such as teacher questions, and to the more abstract concepts such as accepting feelings. Another weakness of FIAC, which also has implications for other pre-coded schedules, is the logistical difficulties its use presents. Flanders acknowledged these difficulties and sought to address them through establishing 'ground rules' for the observer to follow (Amidon and Flanders, 1967). He also advised that the observer be 'biased' in ensuring that their categorisation of behaviour is generally consistent with their interpretation of the teacher's intent, but unbiased in remaining open to evidence suggesting that this intent may be changing (ibid, 1967). However, adherence to Flanders' often complex set of ground rules is likely to provide its own challenges. It has been suggested that application of the earlier FIAC is not appropriate for capturing some models of classroom interaction, such as one person lecturing, silent individual work, or even pupil group work (Stubbs and Delamont, 1976). However, a limited focus may not necessarily be a weakness; in this study the strength of the schedule developed is that it captures what is a distinct mode of classroom interaction.

From my review of FIAC, which proved a useful starting point in consideration of the development of an observation schedule, I looked at a more recent example of systematic observation - the schedules devised for the ORACLE project. Here the originators developed two pre-specified coding systems to capture teacher and pupil behaviour at 25-second intervals - the Teacher Record and the Pupil Record (Hitchcock and Hughes, 1995). The complexity of the classification system meant

that observers required very thorough training (Hitchcock and Hughes, 1995), yet the ambiguity of what was to be measured was still criticised, particularly in relation to teacher questions. Rhetorical or 'psuedo' questions had to be classified as statements, and commands were to be classified either as a question or statement, depending on the whether they elicited a pupil response (Scarth and Hammersley, 1993). Categorisation of a teacher question therefore depended on a number of factors - the question itself, the type of response it elicited from a pupil, and the teacher's feedback to the pupil's response (ibid).

Again, as with the FIAC, the schedules developed within the ORACLE project highlight more general issues of pre-determined coding. Delamont and Hamilton discuss how with preconceived categories there is no inbuilt allowance for the development of new categories; the data has to be collected in accordance with the existing codes. These codes may have ill-defined boundaries, focusing only on small bits of action with important aspects being overlooked (Delamont and Hamilton, 1975). In this way coded schedules can be criticised for showing 'little social scientific sophistication and greatly underestimating the complexity and fluidity of classroom relationships'. The implication of the observation codes is that meanings are unambiguous and independent of their context, so that the analysis is a 'fait accompli', and the rationale behind the codes can be forgotten (Wegerif and Mercer, 1997).

However, as discussed in Chapter 2, educational discourse is not context-free and will reflect the educational ideology and the subject positions of both teacher and pupils, as well as the wider social, cultural and economic environment (Fairclough, 1989). Differences between the 'temporal or spatial' context in which data is collected will affect the teaching approaches used (Delamont and Hamilton, 1975). As Mercer describes, this context will extend beyond the immediate physical environment to the assumptions made about teaching and learning, their influence and the resultant 'educational ground rules' (Mercer and Walford, 1991). He argues that if this context is lost through reliance on pre-specified coded schedules, then the discourse which took place is not

accessible to any other analysis. In this way the analysis has to depend on the adequacy of the initial category scheme and also on the skills of the researchers in applying it (Mercer and Walford, 1991). In this study I wanted to avoid losing the context of my observation by adopting a more flexible research approach.

The work of the linguists Sinclair and Coulthard and their focus on the teacher-pupil pattern of interaction in teacher-led lessons has also greatly influenced this EdD study. Their emphasis was on the structural organisation of classroom talk, rather than the actual content of what is said and done (Mercer, 1991). In their analysis, teacher-dominated lessons are exemplified by the adoption of specific discourse roles by both the teacher and pupil; roles which are then reflected in the hierarchical exchanges of the Lesson, Transaction, Exchange, Move and Act (Mercer, 2000). Within this hierarchy Sinclair and Coulthard describe a pattern of teacher and pupil interaction: teacher initiation, pupil response and teacher evaluation/feedback (IRF/E). Teacher initiation of pupil response can be through a question, an instruction or a statement; following the pupil's response, the teacher evaluates or gives feedback to the pupil/class and then initiates another pupil response. Edwards and Mercer discuss the wide adoption of this pattern of interaction in the analysis of classroom discourse, although they suggest that this was due to a lack of alternatives rather than its innate strengths (Edwards and Mercer, 1995). As whole class interaction was the only pattern observed in the Kenyan classrooms in this study, the work of Sinclair and Coulthard provided a framework within which to develop more specific discourse categories; its application is discussed in more detail in the critique of the work of Hardman.

From this initial exploration of systematic approaches to classroom observation, I went on to consider the work of Barnes, which - as Edwards and Furlong describe - achieves more of a balance between an ethnographic and systematic approach, by incorporating 'intuitive' understanding (Edwards and Furlong, 1977). Barnes was less concerned with the organisational structure of language and more interested in its

content, function and the development of shared understanding (Mercer, 2000). His intention was to move away from focusing only on the structure of language and to record the whole language environment which children experienced in classrooms (Barnes, 1990). From the onset Barnes' theoretical framework was made explicit, with his analysis including lengthy transcripts which enabled him to discuss the interaction from his own perspective (Edwards and Furlong, 1977). Within his framework Barnes acknowledged teacher questions as a key element in the teaching and learning process, but his interest lay in considering how they may constrain pupils' thinking and participation (Sinclair and Coulthard, 1975). In describing teacher questions, Barnes assigned them to four main categories: factual, reasoning, open and social. Factual questions were defined as those that required the naming of something or the elicitation of information from the pupils, whilst reasoning questions described those which encouraged children 'to think aloud' by asking them to explain the 'how' or 'why' of observed phenomena; these could be either open or closed. Barnes' third category was 'open' questions, those that did not necessarily require reasoning, but did ask the children to share their thoughts, ideas or experience. His fourth category was 'social' questions, those which the teacher employed to exercise control over their pupils (Barnes, 1990).

Barnes' categorisation of questions was further developed by the Leverhulme Primary Project which introduced a new element to their classification, that of 'dimension'. Questions were defined as being either in the 'narrow/ convergent dimension', that is closed, or alternatively in the 'broad/divergent dimension, i.e. open questions (Wragg and Brown, 1993). These two main categories of 'divergent' and 'convergent' were further broken down into 'recall' and 'thought' (ibid, 1993). The emphasis placed by Barnes and the Leverhulme project on teacher questions was of particular value to my own study; questions were identified within my theoretical framework as central in the development of children's cognitive, linguistic and social skills. Of significance also, was Barnes' consideration of pupil responses and their implication for understanding and thinking. His focus was on the extent

of pupils' participation in a lesson, and whether it included the initiation of speech, or the expression of personal responses (Barnes, 1990). In this study I wanted to explore the relationship between pupil response and teacher initiation and the categories which I developed therefore had to facilitate this.

A consideration of the work of Hardman was also of particular significance in this study. His observation schedule, shown in Figure 1 below, drew on Barnes' framework for whole class interaction and the focus of his recent research was classroom discourse in Kenyan primary schools. Hardman's schedule is based upon Sinclair and Coulthard's three interactional 'moves', of teacher initiation, pupil response and teacher evaluation (Hardman, 1999). Within the teacher initiation section he considers teacher questions and breaks these down into the two sub-categories of 'open' and 'closed'. Gender of the respondent is included, as is the nature of the response - that is, whether the response is 'choral'. In his second section, 'Student Response', Hardman includes pupil question, student 'demonstrating' an answer, and three categories which refer to the teacher's reaction to the pupil's response. As discussed in relation to the ORACLE project, an emphasis on teacher response, rather than the nature of the pupil's response, can pose difficulties for the observer who has to make a decision as to the way in which the teacher had judged the response - that is satisfactory, partially correct or incorrect. Also, as Wragg argues, questions are only as good as the answers they stimulate (1994). In my study of classroom interaction and its implications for children's learning, the nature of pupil responses was a crucial indicator.

Teacher attitude was addressed further in the third section of Hardman's schedule - Teacher Feedback Reaction (Appendix 1). In this section, five of the eleven sub-categories reflect a continuum of positive to negative reaction: praise - affirm - no reaction - negate - criticise. Hardman's emphasis supports the ideology of praise as a key factor in pupil motivation and school effectiveness (Hardman, 1999). Whether praise has this significance in the Kenyan context is uncertain although

interviewed teachers did talk of its value. In the classrooms observed in this study, praise often appeared to be what Flanders describes as a verbal habit (Amidon and Flanders, 1967), rather than genuine comment on a child's performance. Practices such as children clapping or singing a song to celebrate a correct answer can be so overused that their motivational value is questionable. Although a consideration of praise was of interest within this study, I decided to place less emphasis on it than Hardman within my observation framework, but to address the issue in both the interview and questionnaire.

Other codes within Hardman's Teacher Feedback section related to the teacher feedback to a pupil's answer, these included 'giving the correct answer', 'asking another pupil', 'another pupil calling out the answer', 'repeating', or 'rephrasing' the question, 'giving a statement of facts' and providing an 'open ended statement' (Appendix 1). These feedback strategies are reflected in the design of my own observation framework and the questionnaire and are discussed more fully later. In summary, Hardman's schedule contributed to the development of both my own observation framework, although there were some differences in our overall approach due to the varying purposes of our research.

In this study I aimed to combine both a systematic and more qualitative approach, through a triangulation of research instruments. My intention was to ultimately devise and apply an observation schedule, but I felt that unstructured observation in Stage 1 would a starting point for theory (Stenhouse, 1995). It also helped, 'to identify and clarify relationships, to pinpoint critical processes of the classroom interaction and common phenomena' (Delamont and Hamilton, 1975:8). The observation which I carried out in Stage 1 of this study is described in the following section.

Classroom observation in Stage 1

In Stage 1 all observed lessons were audio taped and an immediate review of the full lesson transcripts contributed to the development of my initial observation framework (Appendix 2). It was important that I designed a schedule to capture the nature of the teacher-pupil interaction

within the observed IRF pattern of classroom interaction. As discussed in Chapter 1, my experience of African educational systems had shown me that a teacher-fronted whole class approach was the dominant practice, with the teacher initiating and evaluating pupil response. There was no variation from this structure in any of the twenty-five lessons I observed, both in the pilot and in this EdD study. However, in order to avoid the criticism that the design of my schedule foreclosed research findings, each lesson was audio taped and then fully transcribed. Tapes were also accompanied by field notes and I could therefore, be responsive to any change from the normal pattern of classroom interaction.

During Stage 1 of my research, and alongside the classroom observation, I developed codes to describe the nature of the observed 'moves' within the IRF structure. I applied this framework to a limited extent in my analysis of Stage 1 lesson transcripts, but it served mainly as a research instrument for this EdD study. Its overall structure was drawn from Sinclair and Coulthard's three categories of Teacher Initiation, Pupil Response and Teacher Feedback. The first section, Teacher Initiation, shown in Figure 3.1, included Instruction: although this may not be a significant aspect of classroom discourse, I thought that its frequency of occurrence, in relation to other types of Teacher Initiation, could be of interest.

Figure 3.1 Stage 1 Study: Classroom Observation Framework – Teacher initiation

Teacher Initiation	Examples
Teacher gives an instruction (I)	Turn to page 60 in your book
Makes reference to children's own experience	What kind of square shapes do you see around you?
Gives explanation or fact (E)	Examples of solid are...
Teacher continuation (TC)	Continuation of same question, by indicating another child, or saying 'some one else'

The next sub-category 'Brings in the child's experience', reflected constructivist ideas, explored in the literature review, as to the importance of acknowledging children's experience and building on what

they already know. Teacher Explanation was the third category in this section, followed by 'Teacher Continuation', which describes the verbal or non-verbal continuation of an original teacher question; the extract below – taken from an observed lesson in Stage 2 - shows an example of this practice:

T	the sun mention any other example of a solid
P	table
T	table
P	doors
T	doors
P	biscuits
T	biscuits are solid what else?
P	wood
T	wood what else?

(*Properties of Matter, L198/206*)

I then considered teacher questions and here I drew on the work of Barnes and the Leverhulme project to classify the nature of the questions asked as shown in Figure 3.2.

Figure 3.2 Stage 1 Study: Classroom Observation Framework – Question classification

Question type	Example
open/recall	Can you name any mammal?
open/thought	How do you think rivers can help or hinder humans?
closed/recall	What is the capital of Uganda?
closed/thought	What do you need to help seeds grow?

However, although this classification seemed the most appropriate for capturing the cognitive and linguistic demands of teacher questions, to assign a question to one specific category is not always straightforward. Questions may, as Wragg suggests, give the appearance of being open, but are in fact aimed at seeking a very specific answer (Wragg and Williamson, 1994).

The second section of my observation framework considered 'Pupil Response' (see Figure 3.3), and here I wanted to capture whether the elicited response was whole class, that is 'Choral', or from an individual pupil (P). Research in developing countries highlights the emphasis on rote learning through choral responses. As discussed in Chapter 2, Ogadhah and Molteno suggest that choral responses may have cultural origins, stemming from the traditional approaches to scripture reading (1998). I felt it was important to generate data on choral responses in this study, as it seemed unlikely that a unison response would be indicative of a high level of cognitive, or linguistic development. Another consideration was the level of participation in a choral response, which my field notes would provide information on.

Figure 3.3 Stage 1 Study: Classroom Observation Framework – Student response

Student Response	Example
Choral	Children in the class respond in unison
1/ 3 words	Child gives two/three words answer, e.g., 'For food'. '
Full answer	Rivers can help us in our lives as they provide food...
Extended answer	Child's answer, reflects their engagement with the question, e.g., ' I think that rivers can help us because they give water so that crops can grow, but they also can flood and cause damage'
Pupil question	Child asks a question, e.g., ' Is it true that rivers can bring disease...' or 'Which is the largest river in the world..'

I considered whether to try to capture the gender of the pupil respondent, but logistically this was not possible; from my seat at the back of the classroom, it was difficult to ascertain the gender of a respondent - all school pupils wear their hair short. It was equally difficult to distinguish the gender of the pupil from listening to the audio-tape. In addition to this, as discussed earlier, although gender is undoubtedly an issue in enrolment, any gender disparity in classroom discourse is less evident.

My focus in the 'Pupil Response' section was therefore the nature of the response, and in Stage 1 this was in relation to its word length. The rationale for this classification was that one or two word responses implied limited opportunity for pupils to experiment with ideas or language. Two of the sub-categories within the 'Pupil Response' section,

however, related more specifically to the nature of the response: 'Full answer', to reflect when a child replies in a complete sentence, making an explicit link between the question and their response and 'Extended Answer', to capture a pupil's full engagement with the question. I felt that by classifying the pupil responses according to their length, useful quantitative data would be generated. However, I recognised the limitations of focusing only on the length of pupil responses and intended to combine this with a more, at this stage undetermined, qualitative consideration of the cognitive and linguistic implications of pupil responses. My final category within the 'Pupil Response' section was 'Pupil Questions'.

The third section of the observation framework, 'Teacher Feedback', as discussed earlier, particularly reflected the work of Hardman. Less emphasis, however, was placed on 'Praise', and it was assigned only one category – Attitude. Hardman's detailed coding of teacher reaction to a pupil response was reflected in a system of descriptors as shown in Figure 3.4 below.

Figure 3.4 Stage 1 Study: Classroom Observation Framework – Teacher Feedback

Teacher Feedback	Example
Attitude	This describes the teacher's attitude to the child's response, from very positive ++, to quite positve +, netural), negative – , very negative --.
Gives answer	The teacher gives the correct answer to the question themselves
Repeats	The teacher repeats the question
Rephrases	The teacher rephrases the same question
Probes	The teacher probes the child's response, e.g. 'Can you explain what you mean 'for food'?
Extended answer	Yes it is true that rivers can cause floods, and for countries such Bangladesh this can cause many diseases and much loss of lives.
High Level evaluation	I think you have made a very interesting point about how rivers can be both good in bringing water which helps us in our lives, but also that they can bring floods which can ruin our homes and that there are also water borne diseases which rivers can bring.

In addition to 'praise', four other teacher feedback categories were specifically drawn from Hardman's schedule; 'Gives answer', 'Repeats' the question', 'Rephrases' the question, 'Asks another child'. I then included three additional categories in order to capture any higher-order

teacher responses: 'Probes' when the teacher 'probes' by asking the respondent a further question, or gives an 'Extended answer' or a 'High Level Evaluation' to the pupil's response.

In Stage 1 the size of my observation sample was relatively small; seven lessons were observed, two science, two English and three maths. The observations were carried out in Classes 4, 5, 6 and 7 in three schools - urban and rural - and involved four women teachers and three men. Many of the findings of Stage 1 of this study were of significance in Stage 2, however, I found that there were limitations in my original categorisation of discourse strategies which needed to be addressed. This was endorsed through further observation of classroom practice, between Stage 1 and this EdD study, in my capacity as an Adviser. I revisited the lesson transcripts, considering them again in relation to the codes I had developed and this enabled me to further modify the observation schedule; these modifications are discussed below.

I found that categorisation of teacher questions was confused by the embedded cultural practice of a mid-sentence rise in the teacher's intonation. The rise was usually followed by a fraction of a second pause before the teacher continued - an indication that a pupil response was not required. I had experienced this practice often in Africa, in both adult and child learning contexts, but was uncertain of its significance. However, I felt that it was not appropriate at this point to ignore what could be a key feature of classroom discourse and therefore adopted Wragg's terminology of 'pseudo' questions to classify it. Another issue was whether the other Teacher Initiation categories I had developed during Stage 1 of this study captured the strategies which teachers used to move the lesson forward.

I had intended that my field notes would provide additional information beyond my overall category of 'choral response' in relation to the level of response. However, I realised that the level of participation in an elicited choral response was of greater significance than I had originally envisaged. It varied considerably; it was low throughout in some lessons

with only a few children participating, and even within a single lesson the level of response was often inconsistent. To support a consideration of the implications of this, I decided to include an additional category, 'Choral Few', in the framework; this would indicate if less than half of the class had participated in a choral response. Another issue in relation to children's level of participation was the number of pupils who raised their hands to respond to a teacher initiation – and here I relied on my field notes.

Similarly, with further reflection, I was uncertain as to the validity of the teacher feedback categories developed earlier. For example, I found it difficult in practice to distinguish between the three descriptions of teacher feedback: 'rephrasing', 'extended answer' and 'high level evaluation'. My original doubts about the overall value of pre-determined codes resurfaced and I was furthermore concerned about the feasibility of applying any schedule whilst observing a lesson. A key consideration, therefore, was how to achieve a balance between developing a schedule which truly reflected the nature of classroom discourse, whilst being manageable within the classroom context. A possible solution here was to introduce an element of timing, where, as Dunkerton describes, specific time intervals can support the logistics of filling out a schedule (Dunkerton, 1981). He discusses approaches to timing, one of which is selective timing where the behaviour is coded every three seconds; this was used in FIAC's application. However, as Dunkerton suggests, this approach can generate misleading data with important aspects being left out, (Dunkerton, 1981).

Other methods Dunkerton discusses are: recording the time spent on each 'category' and its frequency of occurrence, or adopting a 'predominant activity' sampling, where the observer codes and records only the behaviour which best describes what has happened in one time unit (Dunkerton, 1981). Both of these approaches could be useful in considering classroom organisation, for example in a study of the relative time spent on classroom administration. They are, however, less appropriate for an analysis of the structure, content and function of

classroom discourse, particularly in the Kenyan classrooms where the interaction is a continuous process. In addition, focusing on completing the schedule during the lesson would inhibit my writing of field notes. As Galton and Delamont (1985) argue, an observer's impressionistic or descriptive accounts can be valuable in making sense of the observation and without them the context of the discourse is lost. Cormack describes (1995) how observational notes can 'talk' to the researcher; in this study field notes also served as a reminder of questions and issues which I wanted to follow up in the teacher interview.

With the perceived limitations of the pre-determined codes and the logistics of applying a schedule whilst carrying out the observation, I decided that in Stage 2 of my study I would continue to audio-tape and transcribe all lessons. This practice would enable me to write accompanying field notes during the observation, which could then be used alongside the observation framework, to support the analysis process. In this way the analysis would be supported by reference to the transcripts, and to counter Wegerif and Mercer's criticism (1997) that this practice can be too selective, complete transcripts of the lessons would be available for re-examination. I felt that this combination of ethnographic and systematic approaches would enable the study to move 'beyond the status quo' of pre-determined codes and 'develop new and potentially fertile descriptive languages' (Galton and Delamont, 1985). The further development of the classroom observation framework for Stage 2 is discussed in Chapter 4.

Interviews

Alongside the classroom observation, semi-structured interviews were carried out; these formed the second element of the triangulated research approach. Interviews with the teachers followed on immediately from the classroom observation in both Stage 1 and Stage 2 and provided an opportunity to explore the intentions and rationale of the observed teaching strategies. As Silverman (1997) discusses, interviews can be carried out within a continuum of formality from the very formal to the

totally unstructured. He argues that the approach adopted by the interviewer reflects their view as to the nature of knowledge and its construction; a positivist notion of knowledge will lead to a more structured interview.

In both stages of this study the interviews were semi-structured, in that themes discussed generally triangulated with those of the questionnaire and the observation framework. However, the emphasis given to each theme varied according to issues raised by the observation. Adopting a semi-structured approach can provide the interviewee with the opportunity to talk freely, whilst being given some structure (Bell, 1993). Within a second language context it was particularly important to build in this flexibility to ensure that the teachers understood the questions. However, it was still not always easy to ensure that my questions were comprehensible and, as the transcripts of the interviews show, I often had to repeat or rephrase them. This was, perhaps, because of my unfamiliar accent, but it also highlighted a possible limitation in the teachers' own spoken English.

Interviews were audio-taped, a process which, as Coates notes (1993), enables the interviewer to focus on listening and encouraging the interviewee, rather than on the mechanics of transcribing (Coates, 1993). Ely et al (1995) also endorse the importance of the interviewer possessing good listening skills and being verbally and non-verbally responsive. In both Stage 1 and Stage 2, for the reasons discussed, an Interview Schedule was not developed; however, the analysis of Stage 1 interview transcripts, and the ongoing development of the other research instruments helped me to identify relevant themes. The interview questions then addressed these themes, but within the context of the observed lesson, these were:

- The teacher's evaluation of the lesson
- Issues in teaching the subject
- Teaching strategies used
- Issues of teaching in English
- Use of Mother Tongue

- Selection of respondents
- Differentiation of learning
- Feedback/evaluation to a pupil's response
- Other issues/problems[2]
- Experience of inservice training

In phrasing the interview questions in Stage 2, it was helpful to be aware of issues which might lead to formulaic responses. For example, if teachers were asked if group work was one of their teaching strategies they would very likely respond in the affirmative; however, if the question was rephrased, so that it referred to more general issues of classroom organisation, it might generate a different response.

Another issue was that interviews do not necessarily, as Silverman suggests, present an easy passive filter towards the truth. Teachers, although willing to respond openly to questions, may not have the knowledge about their own beliefs and practices 'to hand' (Silverman 1997). My own experience when asking teachers to reflect on the lesson endorsed this; teachers' reflection would not go beyond an expression of satisfaction with the lesson, or maybe a reference to its curriculum coverage. Juma and Njome (1998) argue that the overcrowded curriculum and heavy workload leaves teachers with no time to reflect. Although lack of time may well be a deterrent to reflective practice, my own experience suggests that there is a general lack of understanding as to what it actually entails. This was highlighted in a recent national report prepared by Kenyan educationalists, which described a reflective teacher as one who plans their lessons. Reflection was therefore interpreted as relating to tangible issues of classroom organisation, rather than as an ongoing process (NPBS, 1999). Even if there is a shared understanding as to what is meant by reflective teaching it is less likely to be practiced within a hierarchical educational system where teachers, who are ranked at the lowest level, are likely to be wary of reflecting critically on their own practice.

I was also aware that the relationship between the interviewees and myself might be constrained, but in my role as an Adviser I had no supervisory or Inspectorate role - my responsibility was for the development of a specific inservice initiative at Ministry level which was an expatriate role very familiar to the teachers! This meant that I did not constitute a threat to the teachers and they were unlikely to feel overly inhibited during interviews. In addition, as Schiffen (1997) suggests, by asking open questions the relationship between interviewee and interviewer can be more symmetrical. In this way I hoped that the interview could become more of a collaborative venture, encouraging teachers to consider their own perceptions and practice. Although it was unlikely that one short interview could contribute as Stenhouse (1995) describes, to the development of an 'extended practitioner' I felt that the experience might contribute to the teachers' awareness of issues perhaps not normally considered.

In both Stage 1 and Stage 2, interviews were audio-taped and the tapes were fully transcribed (Appendix 2), using a standard layout which reflected the 'connected sequence' of one turn following another (Swann, 1994). Briggs' recommendation that interviews are first of all read through before any focus on specific utterances (Briggs, 1997) provided a basis for the analysis of the Stage 2 interview transcripts.

The questionnaire

The formulation of the questionnaire was integral in the research design of this study, contributing to the 'between-method triangulation' (Oppenheim, 1996) by providing another perspective on classroom oral discourse practices. The three phases in designing a survey, as described by Cohen and Manion (1995), provided a useful framework for the development of the questionnaire in this study. They propose that initially the general purpose of the survey needs to be identified; in this study my aim was to explore Kenyan teacher's perceptions of classroom discourse practice. Following on from this is the second phase where the

main purpose of the survey if interpreted in relation to subsidiary themes; in my research these were:

- attitudes towards the role of talk in learning;
- own classroom discourse practices;
- influences on teachers' classroom discourse practices.

Cohen and Manion's (1995) third phase is where more specific information is required and this leads to the generation of questions, which in this study were modified during the research process (Appendices 3, 4 and 7).

Another consideration from the onset in the development of the questionnaire was to ensure that its layout was attractive and easy to follow (Oppenheim, 1996). Issues of design are particularly pertinent when the cultural and linguistic environment differs from that of the author. The use of colloquial English or western educational terminology has to be avoided and, similarly, instructions and response methods must be clear and unambiguous. It was important too that questions were not value-laden so as to influence the responses given (Hammersley, 1993). Within a second language environment I considered it more appropriate that the questions were relatively closed, with optional responses given for each. With completely open questions, teachers' responses might have been difficult to understand and it would not have been possible to probe respondents as to their meaning (Cohen and Manion, 1995). However, although a closed questioning approach was used, the option of 'Other', with the request for supporting comments, was given where possible and those made by the teachers contributed to the overall analysis – although their responses also highlighted the difficulties I would have faced if the questions had been completely open.

The questionnaire was piloted twice in Stage 1 of this study before the final version was developed in Stage 2. Its final structure and design reflected both the participants' comments in the pilot studies and the parallel development of the observation framework and the review of literature. The focus of the first questionnaire pilot – in Stage 1 – was its

language, overall clarity and the response method employed (Appendix 3). At this stage the questionnaire was divided into two sections: Section A explored general attitudes towards classroom talk, the role of the teacher, and questioning strategies which they adopted. Section B then addressed wider teaching and learning issues and teacher feedback strategies. A different response method was used for each section; this was to trial the methods, as well as to provide variety and help maintain the respondents' interest. For example in Section A, only one answer had to be selected from those provided in order to complete a given statement, for example:

> **When pupils talk to each other I feel'.....:**
> **worried, impatient, annoyed, pleased, unsure, not in control, other.**

Other questions in Section A asked respondents to quantify a stem statement, for example:

> **'I think the teachers need to lead all the classroom talk?' ...**
> **strongly agree; generally agree; not sure; disagree; disagree strongly.**

In Section B of the questionnaire stem statements were also used, but here teachers were asked to rank the given responses (Appendix 3). This process proved problematic, with teachers being confused as to how many of the options to rank, with the result that some ranked them all, others only a few and some teachers gave equal ranking to several responses.

The sample for the first pilot of the questionnaire was small, selected on the basis of 'convenience' rather than other criteria (Cohen and Manion, 1995) – this was by asking colleagues from the Kenyan Ministry of Education and a few teacher friends to comment on it. Feedback at this stage was given through informal discussion and this contributed to the re-design of the questionnaire. From this small pilot a modified version was produced; this also reflected my ongoing review of the literature by drawing more explicitly on the Initiation, Response and Feedback pattern of classroom interaction developed by Sinclair and Coulthard. In this

way the questionnaire related more directly to the developing observation framework which supported greater triangulation of the research approach.

In the second pilot for Stage 1 (Appendix 4), a third section was added to the questionnaire. The first section, Section A, still explored general issues in teaching and learning, teachers' attitude towards talk in learning and their perception of their own practice. In this section the question structure varied to some extent, but all required only one response to be selected. The second section - Section B – then explicitly addressed Teacher Initiation strategies. Here respondents were required to quantify their responses using a Likert Scale, with a range of 1 to 5, see Figure 3.5 below. Oppenheim suggests that, as well as being relatively easy to construct, a Likert Scale provides a reliable reflection of attitudes; respondents prefer a scale rather than just being asked to 'agree' or 'disagree' with something (Oppenheim, 1996). It can also support an exploration of underlying attitudes not directly related to the content; one example of this in the questionnaire in this study is Question 17, shown in Figure 3.5 below. This question was attempting to explore some of the underlying attitudes to teaching and learning and teachers' perception of their role.

Figure 3.5 An example of a question utilising the Likert scale, used in Pilot 2

Q17. How often do you ask questions which you can't answer?

In Section C of the questionnaire, Teacher Feedback strategies were explored through stem statements which required only one response to be selected to complete the statement, for example:

Figure 3.6 **An example of a question from Section C of the questionnaire, from Pilot 2**

Q25. When I have asked the class a question I generally select a child.....

a. With their hand up
b. With their hand not up
c. Who is calling out
d. Who is not paying attention
e. In relation to gender, that is girl/boy/girl/boy
f. Other

The questionnaire was administered to forty-three teachers selected from each of eight administrative provinces in Kenya; the selection was carried out by Ministry District Education Officers. This 'dimensional' sample (Cohen and Manion, 1995) had actually been identified to attend a national workshop to pre-test teacher inservice materials. District officers were asked to ensure that their selection took into account gender balance and that the teachers taught one of the three focus subjects - maths, science or English. During the workshop the participants were informed about the questionnaire and asked if they were willing to participate in the study, those who were agreed to complete it in their own time. Administration of the questionnaire was again supported by informal interviews carried out by colleagues and myself; these focused on issues relating to the questionnaire's design and structure. Similarly, analysis of the data contributed to my understanding of issues in relation to classroom discourse; my ongoing research findings were also discussed fully in Stage 1 report.

In this Chapter I have described the contribution of the literature to the development of the research instruments, particularly in relation to the classroom observation framework. I have also talked about the design and development of the questionnaire in Stage 1 of this study. In the following Chapter I go on to discuss in greater detail the development of the classroom observation schedule from Stage 1 to Stage 2 of this study.

Chapter 4 Observation in Stage 2 - sample, ethics and development

Classroom observation sample

In this Chapter, I discuss the development of the observation schedule and its parallel contribution to initial analysis of the classroom discourse. First of all I describe the basis for the selection of the observation and interview samples.

In Stage 2 of this EdD study my classroom observation and interview sample was twenty-one lessons observed in six schools, three of which were rural and three urban. The identified schools differed from those of the questionnaire sample; for the classroom observation I needed to select schools which I could feasibly spend time in. I needed to organise my classroom observation around my work as an Education Adviser and therefore schools were selected on the basis of their accessibility, either from Nairobi or from any workshops in which I was involved. An additional entry point was also provided by one of my Kenyan colleagues accompanying me; they not only knew the area but in two instances were also a member of the local ethnic tribe. The rural schools were located in the Masai district of Kajiado, and on the outskirts of Nairobi, and the urban areas were all within the Nairobi district.

Schools were selected to be as representative as possible – geographically, economically and culturally. I also wanted the observation sample to be representative, in terms of the gender of the teachers, the age of the children, and the subject being taught. However, it was the Headteacher who determined which specific lessons I observed, and this was in accordance with the day's timetable, ensuring minimal disturbance to the school and teachers. I had anticipated that I would not be able to observe any maths or science lessons in the lower primary school, as national policy states that Mother Tongue is the language of the lower school. However, as this policy is sometimes overlooked and lessons are actually taught in English I did manage to

observe some lower school primary lessons. My observation – at the Headteachers' request - did not include any top primary classes, that is Standard 8, as they were involved in revision for the impending KCPE exam.

In this study, schools are not named for ethical reasons but I allocated each a letter, from A to F, and a brief description of the schools is given below:

School A
A large primary school of four-stream entry located within a slum catchment area. Like other urban slums in Kenya this meant that the buildings were non-permanent, made of metal sheets, or sometimes just mud and there was no sanitation or electricity. However, the condition of the school, through the support of a Non-Governmental Organisation, had been improved over the last few years. It appeared well kept and the classrooms were housed in permanent structures with windows. The condition of the pupils themselves was less encouraging; most of them were dressed in tatters, often with the sleeves of their school uniform jumpers hanging on by a few threads. Children used stubs of pencils to write in their exercise books and other resources also seemed in scarce supply.

School B
Although on the outskirts of Nairobi, it is described as rural, and is located in a relatively densely populated poor area. The houses in the local catchment area were semi-permanent and the parents apparently existed at subsistence level, mostly through hawking. The school itself was mainly a permanent structure, relatively well looked after, but the children themselves were poorly attired and most were likely to eat only one meal a day. Lack of pupil motivation was cited as a problem by the teachers, who ascribed it to the low probability of their being able to go on to secondary school.

School C
A large, four-stream entry school, located within Nairobi's Eastland's area. Again, the local catchment area was poor with non-permanent housing and many single-room structures. Most of the school itself was housed in a two storey permanent structure with classrooms which had windows and doors. Facilities were generally reasonable with painted classrooms and an adequate number of pupil desks.

School D
A large school, built on hilly ground with the catchment area occupied by a squatter Masai community. The whole area had been suffering from drought in the last year which had caused many of the cattle to die. Of the twelve classrooms, ten were semi-permanent structures with iron sheeting and earthen floors and very cold. Children looked underfed and inadequately clothed. Classrooms did not even have basic resources, such as teacher table, cupboard or shelves.

School E
School E was quite centrally located, constructed near a Chief's camp and the local Teachers Advisory Centre. Its surrounding district had been badly hit by the drought and the school had established, with the support of an NGO, a School-Feeding Programme. This programme had led to increased enrolment with many parents migrating to the area. Children were dressed inappropriately for the cold weather and also appeared in a poor state of health, coughing constantly throughout the observed lessons. Six of the eight classrooms were in permanent structures which had brick walls, concrete floors and wooden windows.

School F
School F lay on the edge of a sprawling slum area, about 50 km from Nairobi, where, as the Headteacher explained, the poverty level meant that many children go without food. A problem which the Headteacher told me led to their begging or stealing during the school lunch break. Payment of levies by parents, or the provision of textbooks was apparently impossible and this was reflected in the low ratio of textbooks to pupils of about 1: 10. Over five hundred children were taught in semi-permanent classrooms which had metal roofs and a skylight in the roof, but no windows. Classroom floors were earthen, the roofs were metal and the walls were wooden – a design which affected the noise level, with the lesson in the adjacent class being very intrusive.

In each school the number of lessons I observed varied, but all were followed by an interview. Unfortunately, as explained earlier, on several occasions either the interview or the lesson itself was lost through a poor recording or a faulty tape. Figure 4.1 below shows which lessons were actually observed, and the right hand column indicates whether there were any problems with the recording.

Figure 4.1 Classroom observation sample – Kenya 2000

School	Type	Size	Class	Gender	Subject	Lesson
School A - T1	Urban	Large	3	Female	English	New Words
School A – T2	Urban	Large	5	Female	English	Plurals
School A – T3	Urban	Large	6	Female	English	Drama Festival
School A – T4	Urban	Large	7	Male	Maths	Discount and sale price
School A – T5	Urban	Large	6	Male	Science	Work and Forces
School B – T6	Rural	Large	5	Female	English	Photography – *part of*
School B – T7	Rural	Large	4	Female	Maths	Volume
School B – T8	Rural	Large	6	Male	Maths	Area of Borders
School B – T9	Rural	Large	4	Male	Science	Land and its Uses
School C – T10	Urban	Large	3	Female	English	Opposites
School C – T11	Urban	Large	5	Female	Maths	Geometry
School C – T12	Urban	Large	5	Male	Science	Properties of Matter
School D – T13	Rural	Small	1	Female	English	Vocabulary
School D – T14	Rural	Small	4	Male	Maths	Money
School D – T15	Rural	Small	1	Female	Science	Senses – *½ of lesson*
School E –T16	Rural	Small	1	Female	English	Words and Pictures
School E – T17	Rural	Small	2	Female	Science	Germination
School F – T18	Urban	Large	3	Female	English	Journeys
School F – T19	Urban	Large	5	Female	Maths	*Interview only*
School F – T20	Urban	Large	6	Female	Science	Refraction

Ethical considerations of the classroom observation and interview

Oppenheim (1998:) states that the basic ethical principle of data collection is that, 'no harm should come to the respondents as a result of their participation in the research'. However, as Cohen and Manion (1995) suggest, ethical considerations relate to the nature of the research and for this EdD study the main ethical criteria was the anonymity of the participants. Selection of the teachers for classroom observation and interview was, like the administration of the questionnaire, carried out through the Ministry systems. Ball (1993) suggests that access to educational settings conducted through formal channels might provide entry, but not necessarily access. However, I hoped that to some extent this would be countered by the Headteacher's selection of the lessons to be observed - on the basis of the day's timetable. This would reduce the disturbance to the school's timetable and hopefully increase the

likelihood of the intended lesson being taught, rather than one specifically prepared. When the classes to be observed had been identified, I was introduced to the teachers where I explained the purpose and process of the observation and asked for their consent. It was, however, unlikely that teachers would refuse and my main concern ethically, therefore, was to ensure that the teachers did not feel threatened in any way and were assured of their anonymity. During the observation I tried to ensure that my presence, at the back of the classroom, was as unobtrusive as possible and that my expression remained open, supportive and non-judgemental. Although sometimes this proved difficult, particularly in several English lessons where large numbers of children read aloud in unison; this was not only incomprehensible but also uncomfortable to listen to. As Ball (1993) suggests, an observer can never be the fly on the wall, but will be always and inevitably become part of the scene. Some teachers did appear more aware of my presence than others, for example in one science lesson, my observation unfortunately coincided with that of an external 'assessor'. Perhaps I presented a more sympathetic figure than the rather intimidating assessor, as the teacher often seemed to be addressing me directly. If nothing else, this was a useful reminder that being observed can be an uncomfortable process and I kept my head bowed, writing notes in an attempt to deter the teacher's attention.

The ethical considerations of the interview process differed from those of the observation and questionnaire. At this stage, the teachers had already been observed and any prior reservations they may have had were now dispelled; the observation was over and there was likely a sense of relief amongst some. Teachers appeared keen to discuss the lesson which they had just taught and the informality and relative shortness of the interviews were also conducive to an atmosphere of openness. As with the observation and questionnaire, the interviewed teachers were assured of their anonymity, although many of them insisted on giving me their names and carefully guiding me so that I wrote them down correctly. Anonymity is a main strand throughout this study, with lessons and interviews referred to only in relation to a lesson title - assigned by

myself – and the line number of the transcript. More information is available about the school, age of children, and gender of the teacher in Figure 4.1 but the name of the school and the teacher is not provided. However, where the teacher uses a pupil's name to invite them to respond to a question, or to give an instruction, these names have not been changed; I felt that the anonymity of the school and teacher subsequently assured that of the pupils.

The process of classroom observation analysis in Stage 2

Although my experience in the Stage 1 of this study made the process of gathering the classroom observation data familiar, it did not make the task of transcribing eighteen observed lessons any easier. In Stage 2, as in Stage 1, each taped lesson was first transcribed by hand, then the handwritten transcript was checked against the tape, before being typed. Tapes were played a third and fourth time to ensure that every nuance of discourse was captured, for example a rise in voice intonation, or a pause. Some minor technical problems ensued; one was lack of clarity of some of the interaction, usually of single words within a pupil's response. Swann points out that observation transcripts may only provide a partial record of talk and that every aspect of talk cannot be 'faithfully' reproduced (Swann, 1994: 39). However, with the rigour of the transcribing process in this study - involving replaying the tape up to four times and modifying the scripts as appropriate - I am confident that the final transcripts in this EdD study represent far more than a partial record of the classroom discourse.

House-style and format of lesson/interview transcripts

In developing the house-style to use for the final version of the lesson and interview transcripts I tried to avoid all punctuation apart from the question mark, as I felt that using other punctuation could preclude interpretation (Swann, 1994). Time lapses in the discourse flow were represented by transcript conventions, rather than a full stop or comma, and no capitalisation was used apart from for names of pupils or places. However, in order to indicate the teachers' use of what I described as

'pseudo-questions' – reflecting a rising intonation of voice - I also used a question mark. Other transcript conventions, used to indicate a short or long pause or an unclear comment, are shown in Figure 4.2:

Figure 4.2 Classroom Observation – Transcript conventions

Transcript Conventions	Meaning
P	Individual pupil
Choral	Choral response
C Few	Few children responding in chorus
T	Teacher
(.)	Short pause
(.)	Long pause
?	Rising intonation of a question
( )	Unclear
(reading)	Child/or children reading from book

For the overall layout, a standard format was used, one which Swann describes as similar to the dialogue of a play, with speaking turns following each other in sequence (Swann, 1994). This was of more significance in the Kenyan classroom context than a column type layout which captures the overlap between speakers; in Kenya the discourse follows a sequential Teacher-Pupil-Teacher pattern and there is rarely any overlap. The left-hand column indicated whether the pupil response was Choral, Choral Few or P for individual pupil. It also captured if children were reading aloud, with the italicised word *(reading)*, and the text which was read out was, where audible, italicised in brackets. This differentiation between 'reading' and other pupil responses was particularly important with one of the analysis criteria being word-length.

Development of Stage 2 observation framework and initial analysis

Transcription and modification of the scripts was an ongoing process over several months, and my familiarity with each of the lessons grew as the time went on. When the transcripts were finalised, the wealth of data they contained was overwhelming and, even with the observation framework I had developed, I was unsure how to proceed. As discussed

in Chapter 3, I was still uncertain of my discourse codes and did not want to apply the schedule to the scripts before I was confident of their validity. My first stage in the analysis process was therefore an attempt to explore this through developing a simplified version of the observation schedule - the Lesson Transcript Analysis Sheet (LTAS) (Appendices 5a, 5b, 5c). Applying the LTAS was time consuming and frustrating - a detailed discussion of this process is not appropriate here - however, its contribution was important. This was not in the data it generated - much of which was later rejected - but in the overall support it gave to my analysis of the classroom discourse through the development of meaningful observation categories.

In addition to my development of an observation framework I also referred to my field notes; these described the whole classroom environment. My field notes also included comments, personal reactions to classroom events and notes on the level of pupil participation; these also proved useful in providing a different perspective on the lesson transcript analysis. These notes were then supplemented with general notes on the school which I gathered through an informal introductory interview with the Headteacher (Appendix 6, Field notes).

Teacher initiation

My earlier research in Stage 1 had suggested that teacher questions were the most common form of teacher initiation and they therefore seemed an appropriate starting point. As discussed earlier, I had used a question mark to indicate the teacher practice of a mid-sentence rise in voice intonation – a 'pseudo' question - and it was this convention which highlighted an anomaly in the discourse structure. I noted that although the way in which teacher initiations were delivered differed, they elicited the same type of pupil response - for example, requiring them to complete a sentence. Some were posed as a question, as indicated by a question mark, but others as a statement; despite this difference pupils seemed to understand the nature of the response required.

This difference in delivery did, however, have implications for the coding of the data – whether to categorise a question according to the type of pupil response it elicited, or in relation to the way in which it was delivered. Rather than subsuming these variations into the broader category of questions it seemed appropriate that any classification related not only to the nature of the initiation, but also to the pupil response they elicited. At this stage I was drawn back to Edwards and Mercer's discussion of the various discourse strategies adopted by teachers in order 'to maintain control and steer the discussion' (Edwards and Mercer, 1995). One key strategy they described was 'cued elicitation', where a teacher ostensibly has asked an open question, but provides a level of guidance and clues which ensures that the pupils achieve the required response (Edwards and Mercer, 1995). In my review of lesson transcripts for this study it was clear that the teachers were also eliciting responses from their pupils, but that these elicitations were much more explicit than the examples given by Edwards and Mercer.

One feature of the observed teacher elicitations was that they often encouraged pupil repetition. Teachers would elicit this type of response by giving an instruction, asking a question, or making a statement. The following examples highlight how this strategy could be framed as an instruction:

C Few poster (instruction)
Teacher read again
C Few poster
(New words, L 22 – 24)[3]

Teacher very good everybody say one thous-and shilling note
Choral one thousand shilling note
Teacher again
Choral one thousand shilling note
(Money, L 26 – 29)

Similarly, pupil repetition could be elicited through a teacher question:

Teacher and rearing of animals and rearing what?
(question)
Choral animals
(Land and its Uses, L 118 – 119)

Pupil f
Teacher we forget which letters?
Pupil f
(Plurals, L 66 – 68)

At other times there was no explicit instruction or question, but pupils knew that repetition was required, for example:

Choral Sharpened
Teacher Sharpened
Choral Sharpened
(New words, L 38 – 40)

C Few selling price
Teacher eh
C Few selling price
(Discount and Sale Price, L41 – 43)

These strategies were sometimes combined, in the following example the teacher gives both and an explicit and implicit instruction to repeat the word 'germination':

Teacher and that growing of seeds is what we call
germination say germination
Choral germination
Teacher germination
Choral germination
(Germination, L58 – 61)

Despite the differences in the way in which these teacher initiations were delivered, the outcome of all was pupil repetition of a word or phrase, and I therefore decided to classify such initiations, as 'Direct Repetition' (DR).

A second strategy which the teachers used was to elicit the completion of a sentence or word, through omitting the last word of a statement or syllable of a word, a strategy which I described as 'Direct Completion' (DC). The following are examples of this practice:

Teacher on Friday she was still absent on Monday
her place was?
Choral empty
(Drama Festival, L298 – 299)

Teacher this is ten percent of the multi?
Choral multiply
(Discount and Sale Price L 146 – 147)

Teacher too small and it will take you a lot of?
Choral time
(Work and Forces, L 335 – 336)

Teacher we get the area of the big one plus the area
of the shaded to be left with the area of?
Pupil unshaded
(Area of Borders, L 33 – 35)

Teacher yes we have seen that this is Mr Kamau's
family they are going on a?
C Few journey
(Journeys, L79 –8)

A third observed Participative Strategy (PS) was when teachers combined the strategy of eliciting a Direct Repetition (DR) with that of asking the pupils to complete a sentence or a word (DC). Here the teacher would make a statement and repeat it, but omit the last word or words, this combination of elicitation strategies was coded as Direct Repetition Completion (DRC), for example:

Teacher where this is? light you direct your mirror to
where there is?

C Few light

(Refraction, L164 – 165, Science)

Teacher the Headmistress said good luck she said?

Choral good luck

(Drama Festival L 207 – 209)

Teacher Semoil bought it for one twenty shillings he bought it for?

Choral one twenty shillings

(Discount and Sale Price, L 61 – 62)

Teacher it contracts very good it contr?

Choral contracts

(Properties of Matter, L 121 – 12)

Teacher yes at home when you go home you drink milk you drink?

Choral milk

(Word, L250 – 251)

Teacher we are dealing with getting change we are?

Choral getting change

(Money, L34 – 35)

Teacher good the white part of the? eye the white part of the?

C Few eye

(Senses, L72 – 73, Science)

A fourth discourse strategy, observed in the Kenyan classrooms, was when the teacher asked the pupils a question which required only an affirmative, or negative response, for example:

Teacher d is it correct?

Choral yes

(New Words, L181 – 182)

Teacher but we don't say womans and we don't say mans or mens okay ?

C few yes

(Plurals, L148 – 149)

Teacher who may be travelling on foot is not using a machine is it true?

Choral yes

(Work and Forces, L92 – 93)

These requests, more often for affirmation than negation, could in theory elicit longer responses, especially when the teacher asked, 'Have you any questions?', but in practice this never occurred. Perhaps this was indicative of the pupils' familiarity with the formulaic structure and their role within it. I termed this strategy as Direct Yes/No (DYN).

In the overall analysis I noted that Direct Completions (DCs) were more likely to be presented as questions, although sometimes they were in the form of an instruction or statement. However, an elicitation of a Yes/No answer (DYN) was always delivered in question form, and the elicitation of a Direct Repetition (DR), and Direct Repetition Completion (DRC) occurred through a question, instruction or statement.

In defining these practices I had moved away from the accepted categorisation of discourse practices and developed a means of classification which was truly reflective of those occurring in Kenyan classrooms. As discussed in Chapter 2, Edwards and Mercer (1995) suggested that through cued elicitation pupils are inculcated into a seemingly shared discourse, a process which they described as leading to 'surface', rather than 'principled'. Ritual learning may support certain aspects of children's learning, but it is likely that an over-emphasis on the process will restrict their linguistic and cognitive development. The teacher elicitation strategies applied in the Kenyan classrooms appeared even more restrictive to children's learning than those described by Edwards and Mercer. Through their focus on repetition, or sentence

completion, the elicitations achieved little more than a semblance of teacher-pupil interaction and a level of pupil participation; I therefore felt that a more appropriate term to describe these discourse strategies was 'Participative Strategies' (PS). These strategies were:

- Direct completion (DC)
- Direct repetition (DR)
- Direct repetition and completion (DRC)
- Direct Yes or No (DYN)

} Participative Strategies

- Instruction
- Questions

} Initiations

Using this classification enabled me to consider their use in the different subject lessons and most importantly to distinguish between Participative Strategies (PS) and other forms of teacher initiation, namely 'real' questions; these made higher cognitive and linguistic demands upon the pupils than the participative strategies. As discussed in Chapter 2, the categories to describe teacher questions - which I had developed in Stage 1 of this study - reflected the work of Barnes and the Leverhulme project, these were:

- Closed-recall
- Closed-thought
- Open-recall
- Open-thought

It was important that there was a clear distinction between the codes used to describe the different types teacher questions in order to facilitate meaningful analysis. Similarly, the codes developed had to reflect the ideas on teaching and learning explored in the literature review. However, two weaknesses of my original categorisation became apparent; the first was in relation to the use of the terms 'open' and 'closed'. Closed questions have traditionally been considered as those which require children to state facts and provide a specific response. Alternatively, open questions are thought to stimulate children's thinking, and encourage them to share their ideas and personal experience. In my review of Hardman's work and Stage 1 of this EdD

research I had described this classification as being too broad. To some extent the development of the additional category of Participative Strategies had addressed this limitation, but I still felt the terms 'open' and 'closed' were problematic. If closed questions elicited factual knowledge, then I felt that they would be more clearly described as, 'Factual', and questions which stimulated children's thinking and reasoning could be more appropriately described as 'Thought/ Reasoning'.

My own observation of the predominance of 'closed' or 'factual' questions in Kenya has been endorsed by research studies in similar contexts (Ogadhah and Molteno 1998, Fang 1996, Hardman, 1999); this suggested that the categorisation of factual questions would benefit from greater refinement. Yet the Leverhulme project's sub-categorisation of factual questions as 'recall' and 'thought', described earlier, seemed inappropriate. All questions require a degree of 'recall' and to differentiate questions in this way is difficult. A more meaningful way of classifying 'Factual' questions was, I felt, through the use of the terms 'narrow' and 'broad'. Narrow questions were those which made the least cognitive and linguistic demands upon the child, even within the Factual domain; examples of Factual Narrow questions are given below in relation to the three subject areas:

English

Teacher	Read again there is another new word here can you read this one?

(New Words, L21)

T	and we said when we are writing the many words into plurals we only add what?
T	What is the opposite of full?

(Opposites, L206)

Maths

Teacher	fourteen plus one?

(Money, L63)

T and how many rows?

(Volume, L73)

Science

Teacher hearing you use your?

(Senses, L10)

T we did the experiment the rising up of soil of water in soil is called what?

(Properties of Matter, L20)

T what is a right angle?how many degrees does it have?put your hand up yes?

(Geometry, L25/26)

Factual Broad questions, on the other hand, although still relying on factual input, appeared to be more cognitively and linguistically demanding. These might require a pupil to respond to an English comprehension question, express a previously learnt mathematical formula, or describe a scientific phenomena. Examples of Factual Broad questions are given below in relation to each of the three subjects:

English

Teacher fear eh what does that mean the word fear means (.) eh?

(Drama Festival, L36)

Science

T can you name some of the fruits which have seeds inside? Eh Leah?

(Germination, L27)

Maths

T so how we work out the percentage discount yes?

(Discount and Sale Price, L51)

By classifying the factual questions as 'Factual Narrow' or 'Factual Broad', the more intellectually challenging questions could now be clearly distinguished as 'Thought/Reasoning'. These were higher order questions, which required pupils to experiment with ideas and language; this could be through explaining a process, sharing an experience, predicting, hypothesising or evaluating an outcome. For example in the maths lesson - Area of Borders- the class had been considering how to determine the area of border of a field. In response to a teacher's Factual Narrow question the following exchange took place:

P 'It is 55 plus 2'.

T 'Where do you get 2?'

P 'this from from the (.) plus em school compound to the road plus em the road is one plus yes another side it becomes 2, 55 + 2 = 57'

(*Geometry, L220/225*)

In this example the teacher attempted to probe the child's thinking as to how the answer was reached, a process which required the pupil to draw on their cognitive understanding, as well as on their oral English speaking. One example of this was in an observed science lesson, 'Properties of Matter', where the teacher had been asking the pupils to give examples of three forms of matter - solid, liquid and gas; pupils had mentioned some solids and liquids, but had not given an example of a gas. The teacher elaborated to help the pupils to achieve the required answer:

T also another state of matter that you did not mention but we feel that it is there we feel it is there that is why we are putting on sweaters which type of this?am I talking about eh?

(*Properties of Matter, L76/78*)

In order to respond to this question, the pupils had to make a conceptual link between the cause and effect of feeling cold. Questions such as this

reflect an attempt to scaffold the children's thinking, and to help them make links between their own experience and academic knowledge. Drawing on the work of Barnes and Wragg my final classification of teacher questions for this EdD study was therefore:

- Factual Narrow (FN)
- Factual Broad (FB)
- Thought/Reasoning (T)

Pupil responses

Having determined what I considered the most meaningful way to describe the teacher initiation strategies the next step was to ensure the validity of my framework for analysing pupil responses. As discussed earlier, the codes developed so far reflected the interrelationship of teacher initiation and pupil response. For example, the term Direct Completion described both the teachers' initiation and the pupils' response:

Teacher on Friday she was still absent on Monday
her place was?
Choral empty
(Drama Festival, L298 – 299)

Pupil responses were therefore classified in the same way as the teacher input, as follows:

- Direct repetition
- Direct Completion
- Direct Repetition
- Direct Repetition/completion
- Direct Yes/No
- Factual narrow questions
- Factual broad questions
- Thought/reasoning questions
- Instructions

As discussed earlier, in Stage 1 of this study the main criteria for coding pupil responses had been their word length. This had provided a useful

starting point and had provided some insight into the balance of teacher-pupil talk, as well as into the opportunity which pupils' were given to experiment with language and to try out ideas. However, as acknowledged in the earlier discussion, reliance on only the word length of pupil input had obvious weaknesses; length of a pupil response does not necessarily reflect its linguistic and cognitive demands. In Stage 2 of this study, categorisation of pupil responses according to their word length formed only the second dimension of the analysis process. Within this dimension I also modified the initial categories, for example I realised that the category of 'one/three words' did not reflect the frequency of one-word responses. One-word responses therefore were categorised separately - this included 'yes' and 'no' responses. The practice of pupils reading aloud in English, either in unison or individually, also needed consideration. As discussed earlier, categorising passages which were read out aloud according to their word length would generate misleading data; I therefore decided that when pupils read aloud this would be categorised separately. In consideration of these issues, the final criteria adopted for the classification of pupil response, according to their word length, was as follows:

- One word (including Yes/No)
- Two/three words
- Four words plus
- Individual reading aloud
- Choral reading aloud

The third dimension of the analysis of pupil responses in Stage 2 was their nature, that is whether they were 'choral', or individual. I felt, as discussed earlier in this Chapter, that it was important to distinguish between Choral and Individual pupil responses, as the former were more likely to reflect low level responses, such as repetition. A further distinction between Choral and Choral Few was also considered important as an indication of children's level of participation. The sub-categories in this dimension of pupil response were:

- Choral
- Choral Few
- Individual Pupil

Analysis of pupil response was therefore carried out in relation to the three dimensions of:

- Teacher initiation/pupil response
- Word length
- Choral or individual

Teacher feedback

Having developed a meaningful analysis framework with which to consider teacher initiation and pupil response and their interrelationship, the next consideration was my original classification of teacher feedback. Again upon further reflection I was not confident that the categories which I had developed in the first Stage would fully capture the discourse practices of Kenyan classrooms. For example, some of the categories, such as 'Repeated Question' seemed to occur very infrequently and others, such as 'probes', very rarely, if ever, occurred.

It was also difficult to determine whether to classify a teacher feedback as 'rephrases', 'extended answer' or 'high level evaluation'; all three I felt were more appropriately encompassed under the term 'explanation'. With the reclassification of the teacher feedback in this way I realised that the explanations played a much more central role in maintaining the discourse pattern than I had first envisaged; they were used as a means of linking a teacher's feedback with an initiation. For example, in the extract below, the teachers' explanations followed on from their repetition of a pupil answer and led on to an initiation of a pupil response:

T nitrogren is a gas yes what else who can
remind me all those ones are what we call
gases so we have now known that matter is

made up of three things and these ones are
either?

(*Properties of Matter, L89*)

T buying ( ) in buying we have two people eh?

(*Land and its Uses, L34*)

The nature of teacher explanations varied across the subjects; in English lessons, for example, they were often a means of focusing children's attention on a word or phrase in the passage; for example:

Teacher eh when Nuamboke said my mouth felt dry
she means that she was?afraid excited
thirsty happy what which of those words
describe that phrase eh when she my mouth
felt?dry somebody who has not talked yes?

(*Drama Festival, L187)*

T that is what started with (.) were the two
Mary and Tom happy because they were
going for the holidays in Mombassa were
they happy (.) were they happy? Colin

(*New Words, L308*)

Or, the teacher used an explanation to reinforce a grammatical rule:

T but we said there are some many words
which we don't add 's' when we are writing
them into plural? form you remember that?

(Plurals, L33)

Similarly, English teachers might use explanations to consolidate a concept already learnt, for example:

T yes the teacher's chair and that is a picture
of a chair is it clear?

(*Words, L173*)

Choral that bag is empty

T that means it has nothing yes who will give us another word?

(English, L216)

In science lessons the teacher explanations appeared longer and more frequent and, as in the following extracts, sometimes accompanied a whole class demonstration:

Teacher so I am going to put some water in this glass up (teacher demonstrating) to that level okay?

(Refraction, L24)

T yes ah very good I am pushing a biro okay (laughter) that is a push that is what?

(Work and Forces, L 39)

Science teachers would also explain or elaborate on a question they were asking, to assist the children in answering it:

T and we are told that when you speak or you enter into an empty? room and you shout what will happen? what will you hear?

(Refraction, L65)

Science teachers, like their English teaching colleagues, also used explanations to consolidate a concept just covered:

T loam soil and we also looked at what we call how water passes through soil which word was it? dra...?

(Properties of Matter, L15)

T nose you use your nose don't forget you use your nose for smelling tongue for tasting hands for touching ears for hearing (.) now lets come

to smelling there are those with good smell and bad?

(Senses, L22)

Sometimes science teachers made a link between the pupils' own experience and the content of the lesson through an explanation, although the following example shows the teacher making the links for the children, rather than supporting them in forging their own:

T from Drive-in okay and remember that from Drive-in is? Far distant than? Dawanol and therefore this one with bicycle will reach here earlier and maybe the other one will come tired by the time you reach here you are also tired is it true?

(Work and Forces, L132)

Although the way in which teacher explanations were used differed, I felt that any attempt to sub-categorise them accordingly would not only have presented difficulties, but it would also generate data of uncertain value. What seemed to be the most significant feature of all teacher explanations was their role within the overall teacher discourse, and particularly the way in which they linked teacher feedback to initiation. In the Stage 2 observation schedule, the term 'explanation' therefore replaced the Stage 1 'feedback' categories of 'rephrases', 'extended answer' and 'high level evaluation'.

As well as 'explanation', the third section of the schedule included teacher 'praise'; this replaced the original category of 'Attitude' which sought to measure how positively or negatively a teacher responded to a pupil answer. This approach would, as discussed in Chapter 6, not be easy to apply, but it also seemed of little relevance within the Kenyan context. The final framework used for the analysis of the classroom observation was therefore as shown in Figure 4.3 below:

Figure 4.3 Final Observation framework used for analysis of data analysis collected in Stage 2 of the research

Teacher Initiation	Examples
Instruction	Teacher gives an instruction, such as 'get your books out'
Direct repetition (DR)	Elicitations which require children to repeat word or phrase
Direct completion (DC)	Require pupils to complete a sentence, e.g. 'Rivers provide us with .....'
Direct repetition & completion (DRC)	Elicitations which require repetition 'rivers provide us with food, rivers provide us with?
Direct Affirmative/Negative (DYN)	Elicitation of either 'Yes' or 'No' response,
Teacher continuation (TC)	Continuation of same question, by indicating another child, or saying 'some one else'
Factual narrow question (FN)	What is largest river in Kenya called?
Factual broad question (FB)	What did we say rivers provide us with?
Thought/reasoning question T/R	How do you think a river can be a help to a community?
Instruction	Get your books out.

Pupil Response	Examples
Choral (Choral)	Full, most/all the children in the class respond in unison
Choral Few (C Few)	Few, only some children in the class respond in unison
Individual pupil response (P)	Only one pupil responds
1 or 2 words (including yes or no)	Child gives one word answer only, e.g. 'Food'
2/3 words	Child gives two/three words answer. For example, 'For food'. '
4 words or more	Child gives fuller answer. For example, 'Rivers can help us in our lives as they provide food'
Pupil question	Child asks a question, for example,' Is it true that rivers can bring disease...' or 'Which is the largest river in the world..'

Teacher Feedback	Examples
Praise	Gives praise, either as only feedback or with repeated answer, explanation...
Repeats Answer (RA)	Repeats answer given by pupil – often verbatim
Repeats Question (RQ)	Repeats the same question
Teacher continues question (TC)	Continuation of same question, by indicating another child, or saying 'some one else'
Explains or elaborate (E)	Yes rivers can provide us with food such as fish
Miscellaneous	Input which does not fit in with other categories

In this Chapter I have described the development of the classroom observation framework from Stage 1 to Stage 2 of my study. I have shown how the process of developing the schedule led to an initial analysis of the discourse practices in Kenyan classrooms. I have also highlighted that the development of the observation schedule was a central feature of my research and consumed the greatest amount of my

study time. However, I considered the time spent worthwhile as it led to the development of a schedule which was meaningful within the Kenyan context. The schedule avoids the limitations, discussed in Chapter 3, of pre-determined codes yet provides an analysis framework. In the next chapter I describe the parallel development of the other main research instrument, the questionnaire.

Chapter 5 Stage 2 - Questionnaire and Interviews

This Chapter describes the final stages in the development of the questionnaire which was used in Stage 2 of my study. It also discusses the way in which the questionnaire was administered, the sample and the ethical considerations. Finally it serves as a foundation for the triangulation of the research findings in Chapter 6, by providing a brief description of the data manipulation process for the three research instruments - the questionnaire, the observation schedule and the interview framework.

Questionnaire used in Stage 2

The overall structure of the questionnaire for this EdD study did not alter from that adopted in Stage 1; there were three sections exploring teachers' general attitudes, teacher initiation strategies and teacher feedback methods. However, alterations were made to the questionnaire's layout; questions and responses were 'boxed' 'so they would stand out more clearly (Appendix 7). Also, some of the response methods and the wording of a few questions were altered following the Stage 1 findings.

I had found that teachers were generally positive about what could be described as the unorthodox approach of adopting different response methods in the questionnaire. In the informal interviews in Stage 1 they described the different response methods as being both appropriate to the individual sections and helpful in sustaining their interest. However, there was some dissatisfaction expressed with the numerical calibration of the Likert Scale – used in Section B. The respondents felt that each calibration needed to be quantified descriptively, through the use of adjectives such as, 'a few', 'a lot' and so on. Therefore, in Stage 2, I added descriptors to the calibrations, although this was not an easy task (Appendix 7).

Similarly, the teachers in Stage 1 reported the selection of only one response to questions in Section C as restrictive. However, the pilot questionnaire - which had required teachers to rank all the responses - had also proved unsatisfactory - so I decided in Stage 2 to restrict the respondents to selecting three responses in Section C. In addition to the questionnaire's response method, the language and structure of some specific questions was modified. For example, some teachers had been unclear as to what the term *'whole class'* meant; this term is used in 'the west' to distinguish between the different ways of organising learning. Therefore in Stage 2, questions which included this term were rephrased, although I tried to ensure that their intended focus on differentiation of children's learning was not lost. For example, Question 7 was altered from *'I prefer to teach the same lesson to the whole class....'* to *' Do you think all pupils in a class should be doing the same tasks at the same time?'*. Other modifications to the questionnaire for Stage 2 included an additional response of *'future leaders'* to Question (2), which asked, *'How do you think most Kenyans view children?'*. Any uncertainty I had about the relevance of this response was shown to be misplaced when it was selected by over 60% of the respondents.

Finally I carried out some refinements myself, such as rephrasing the stem statements of Section A as questions, and adding another question which explored the 'disadvantages' of group work alongside their advantages. The questionnaire administered in Stage 2 of this EdD study is shown in Appendix 7, and Figure 5.1 below shows how the questions related to the subsidiary research themes.

Figure 5.1 Themes of the questionnaire used in this study

Questionnaire themes	Questions number
Teachers' attitudes towards the role of talk in learning Views on classroom talk	(Questions 3, 5, 6, 9, 10, 13. 14)
Perception of own classroom discourse practices	(Questions 4, 8, 24)
Perceptions as to influences on classroom discourse practices	(Questions 1 and 2, 9, 10, 11, 30, 31)
Teacher initiation strategies	(Questions 15, 17, 18, 19, 20, 21, 22, 23)
Teacher evaluation strategies	(Questions 25, 26, 27, 28, 29)
General teaching approaches used	(Questions 7, 8, 12, 16, 30)

Questionnaire sample

The sample for the EdD questionnaire was 359 teachers who were selected, like the observation sample, on the basis of their 'representativeness' in terms of the school's size, location and its cultural and economic environment. In accordance with these criteria two regions were chosen - Kajiado and Kirinyaga Districts. The first, Kajiado (also a focus for some of the classroom observations), is a vast district bordering Tanzania on its west side, the Coastal Province to the south and the Serengeti plains to the east. Most of its inhabitants are Masai pastoralists, living a nomadic life on the semi-arid land, with a continuous search for food and water for their cattle. Some areas within the district have more favourable climatic conditions and here arable farming is practised; this has led to more ethnic diversity. Overall, the disposable income of the people within the district is low and poverty is widespread, affecting both school enrolment and retention rates. Another factor contributing to low school enrolment in Kajiado is the negative attitude which the Masai people often have towards formal education (Sankale, 2001).

The second sample district, Kirinyaga, lies in the Central Province of Kenya and covers an area which extends to about 50 miles north-east of Nairobi (Kanja, 2000). It has diverse geographical features, with hot and dry plains to the south where the major economic activity is rice crops. In the middle, cooler part of the district, coffee is the main crop and further north tea farming is predominant. Kirinyaga is rated as a 'high potential' district, although it includes what Kenyans describe as 'pockets of poverty' (Kanja, 2000).

Information about the teachers was gathered through the preliminary section of the questionnaire; this related to the gender of respondents, years of teaching experience and the Standards (Classes) they taught (Appendix 7). The total sample of 359, comprised 226 female teachers (59%), and 133 male teachers; this reflected a higher proportion of women than the national average, which is 41% female. However, the national average is lowered by the scarcity of women teachers in the

northern, Muslim, areas of Kenya and the questionnaire was, therefore, fairly representative of other areas. In relation to their teaching experience, the highest proportion of both men and women teachers had taught for between 6-11 years; details of the sample are shown in Figures 5.2 and 5.3.

Figure 5.2 Questionnaire sample - Years of teaching experience[4]

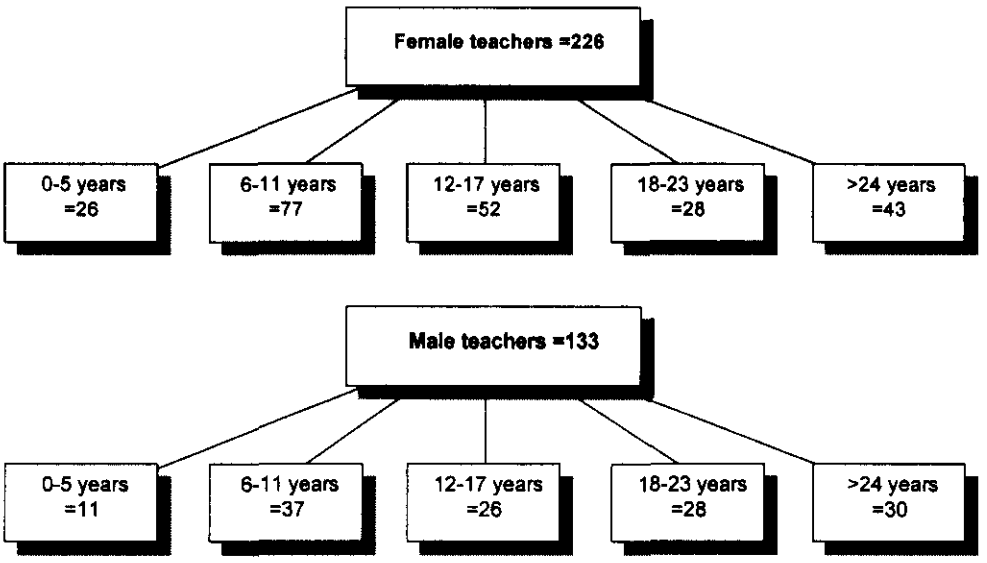
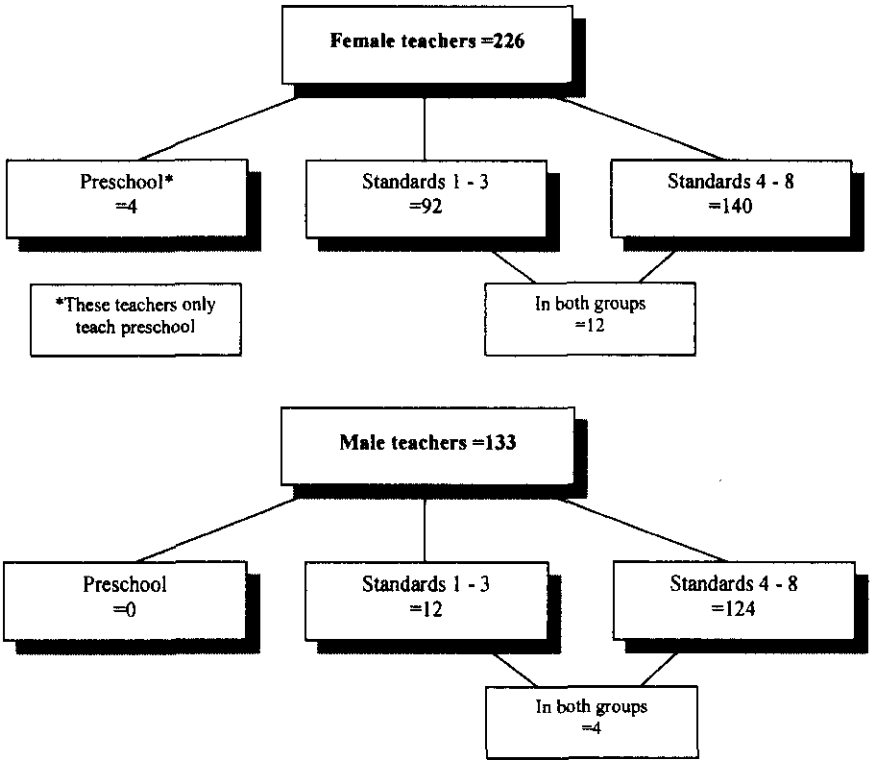


Figure 5.3 Questionnaire sample - Standards taught by teachers[4]



The above Figures and Appendix 8 show the 'representativeness' of the sample, but also highlights issues such as the low numbers of male teachers in pre-school and lower primary classes.

The preliminary section of the questionnaire also asked for information about the schools themselves (Appendix 7). As Denscombe (1982) discusses, the school's external environment is likely to influence the internal environment, and this is particularly so in Kenya with its educational cost sharing policy. The economic and social status of the external environment can affect the school's enrolment, its level of resources and the motivation of the teachers. Consequently, I asked the respondents to classify their school within the following three areas:

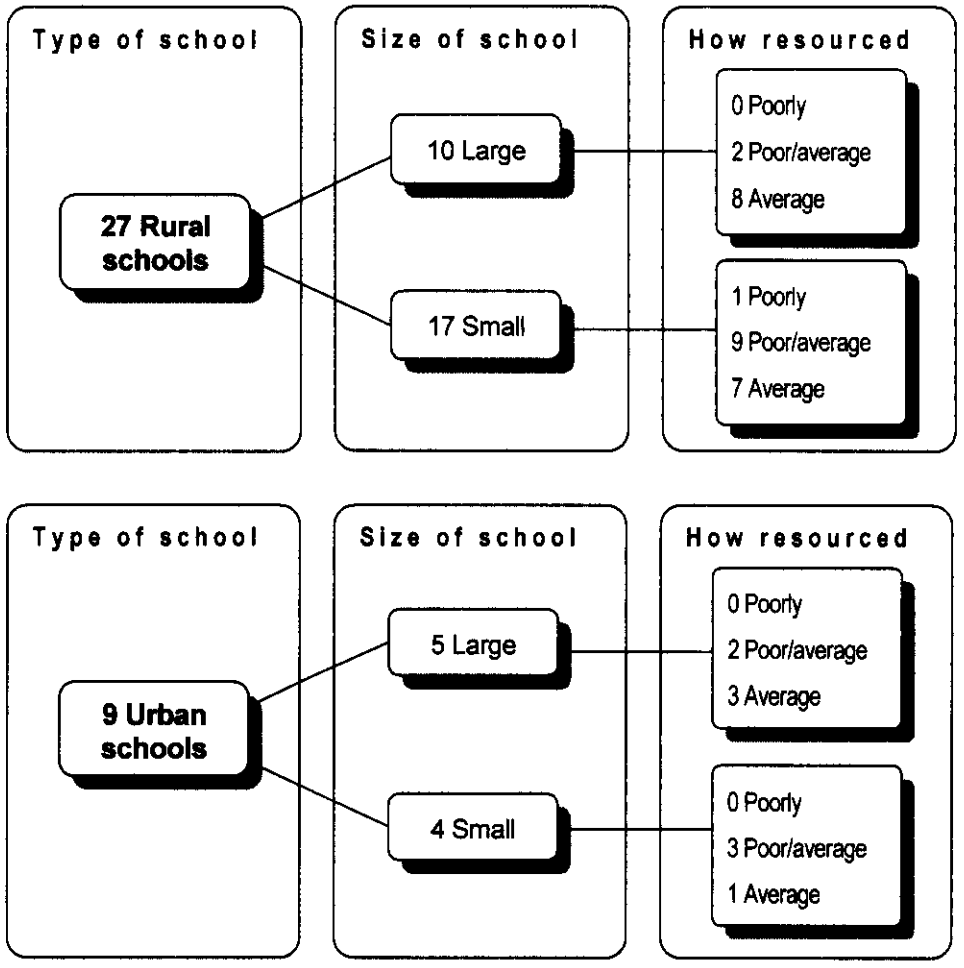
- Rural or urban
- Large or small
- Poorly resourced, adequately resourced, well resourced

However, in hindsight, a limitation of the questionnaire design was that it did not provide parameters to assist teachers in determining the relative resource level of their school. This led to differences between the teachers' evaluation even within the same school, with some describing their school as 'poorly' resourced whilst others perceived it as 'averagely' resourced. To counter this design weakness I introduced another category at the analysis stage, so that schools which had been described by the teachers as both poorly or averagely resourced were re-classified as 'poor/averagely' resourced. None of the schools were deemed well-resourced - this was endorsed by my Ministry colleagues who were familiar with the geographical area, as well as with national standards. Schools were therefore classified as either:

- poorly resourced
- poor/averagely resourced
- averagely resourced

Details of the schools are given in Figure 5.4 below.

Figure 5.4 **Questionnaire sample - Types of schools**



The higher proportion of rural schools in the sample reflects the national pattern and their resource level is also generally representative of Kenyan primary schools. As discussed earlier, the sample for both the classroom observation and the questionnaire was selected to be reasonably representative. It was not, however, the focus of this EdD study to compare and contrast findings within the different categories, for example, in relation to the gender of the teacher or between teachers from rural or urban schools - although the data generated could facilitate future explorations of this nature.

Ethical considerations in the questionnaire administration

Before the distribution of the questionnaire an informal interview took place with the Headteachers; this was to describe the purpose of the questionnaire and to ask for permission to distribute it amongst the

teachers. If the Headteacher agreed, the questionnaire administrator, a colleague of mine from the Ministry, talked to the teachers during a break time. Here they explained the purpose of the questionnaire in contributing to research being undertaken, and described its general focus. There did not, however, given any detailed input about the questionnaire's specific focus on the role of talk, as this might have prejudiced the results (Cohen and Manion, 1995). After providing this overview, the administrator described the structure of the questionnaire and its response methods, and a date and time was agreed upon for the collection of the completed questionnaires.

Throughout, it was emphasised that completion of the questionnaires was entirely voluntary and teachers were also assured of their anonymity – they were asked not to write their names on the completed questionnaire. Teachers were also informed that no record would be made of the number of teachers in a school, so that this data could not later be cross-referenced with the number of questionnaires collected. However, although this supported the ethical principles of the process it did mean that it was not possible to be precise as to the rate of return, although it was estimated at being about 90%. This high rate of return was most likely because of the questionnaires being collected at an agreed time and date; requesting the teachers to post the questionnaires would have likely led to a much lower rate of return, particularly in the rural areas where there are no post offices.

Another possible influence on the high rate of return is a cultural one, as the Kenyan people tend to respond positively and willingly if asked for support. However, it was also likely that we had inadvertently benefited from what Festinger and Katz (1995) describe as the 'economy of seeking assent and co-operation' for research by 'going to the very top of the organisation or system in question'. With the administration of the questionnaire through a Ministry of Education officer, and its further endorsement by the Headteacher, it was more than probable that the teachers would take the time to complete it. I am not sure how this 'top-down' approach could have been avoided, as any communication with

Kenyan schools has to go through the appropriate Ministry channels. Again, as with the classroom observation, my only strategy to counter this was to assure teachers of their anonymity and express my gratitude. One consideration here is that if the teachers did feel pressured to complete the questionnaire it might have influenced the responses they gave; teachers might have tried to select what they considered the 'right' answer. However, the way in which the questions were phrased and the response methodology adopted meant that even if there were 'right' answers, determining them would not be easy. Similarly, any attempt to select 'right' answers would in itself generate interesting data about the teachers' perceptions of good practice.

In this section I have described the administration of the questionnaire, the sample and the ethical considerations. In the next section I describe the data-based analysis process of the questionnaire and observation schedule and give a brief description of the analysis of the interviews.

The process of analysis

The questionnaire

To support the analysis of the questionnaire, a replicate was created in a database software application. All the teacher responses, including the school and teacher information, were keyed into the database (Appendix 9). Initially the data was entered on an Acorn RISCos computer, using a package called Data Power™. It was later moved into MS Access and MS Excel, which allowed the information to be inserted into my work in the form of tables, facilitating totals and averages.

As discussed earlier, in total there were three hundred and fifty nine (359) questionnaire respondents. However, the number of responses to any one question varied between 351 and 420, an anomaly due to individual teachers not responding to some questions, or selecting more than one response to others. To counter this I calculated the percentage level of a specific response in relation to the actual numbers of responses to that question.

The first two sections of the questionnaire required only one response to each question, so the collation of this data was relatively straightforward (Appendix 7). However, Section C, Teacher Evaluation, required teachers to rank their first three responses and this proved more problematic. Here, for each question, the number of times a response was ranked first, second or third was noted - if a teacher ranked two responses as their first choice this was also included; this process enabled me to determine the most popular responses. I also compared the overall weighting of each response, by allocating three points to a first choice, two points to a second and one to a third, and then totalling the number of points for each response. Generally, the responses ranked first were also those with the highest weighting, but there were some discrepancies; these and their implications are highlighted in my discussion (Appendix 10).

As well as the quantitative analysis of the questionnaire findings, I reviewed the written comments made by the teachers; these had been initiated by the inclusion of 'Other' in the optional responses given in Sections A and C. Interestingly, even when 'Other' was not selected some teachers had chosen to add comments; one example of this was Question 12, which addressed the issue of variation in teaching approaches in the three subjects. Here 89% selected a definite response, but 112 teachers - approximately 36% of the total respondents - also added a comment. I reviewed these comments in terms of the main issues they highlighted and then categorised them accordingly (Appendix 11).

The observation schedule

For the analysis of the classroom observation, every input was coded according to the categories shown in the Framework (Figure 4.3, page 85) and manually counted. This data, as with the questionnaire, was entered into Data Power and subsequently transferred into Access and then into Excel. The Access application facilitated interrogation of the data - about the frequency of use of specific discourse strategies - and it also enabled an exploration of the relationship between teacher discourse strategies. The Figure below and Appendix 12 show the results of a

search for every line in the transcript containing a 'Yes' in the 'E' (Explanation) field and in the 'Q' (Question) field.

Figure 5.5 Database query - Transcript 10, English lesson. Query - find occurrences of 'E' (explanation) AND 'Q' (question) together.

27	53			Yes	Yes				Yes		
56	113			Yes					Yes		
71	147			Yes					Yes		
76	157	Yes		Yes					Yes		
77	158			Yes					Yes		
111	226			Yes					Yes		
122	249			Yes					Yes		
124	253	Yes		Yes					Yes		

In each lesson the frequency of a discourse category, such as Participative Strategies or Questions, was considered against the overall number of teacher turns. For example, if a Participative Strategy occurred in ten out of twenty teacher-turns, it would be described as occurring in 50% of all teacher inputs. The sub-categories of the Participative Strategies and Questions were also considered in relation to their main category, not the total teacher input. I also noted the highest and lowest occurrence of a particular discourse strategy within a subject, and its mode and median.

The data on individual lessons was then amalgamated according to the subject area; this supported a consideration of the discourse strategies within and across the subjects. A total of 2,134 teacher and 2,115 pupil inputs were classified, and their classification was manually cross-checked. With the complexity of the observation framework and the overlap between some of the categories, there was sometimes a small margin of error in the final data; this is only between 1 and 2 percent and is clearly indicated in the tables of data.

The interview transcripts

In my analysis of the Interview transcripts I first of all read through all the transcripts to verify that the themes identified earlier were still appropriate. In this process I highlighted another recurrent theme which was of significance to the analysis - issues/problems. As discussed in Chapter 3, the interview themes correlated with those explored in the

questionnaire and the observation framework. Quantitative analysis of these themes was not appropriate and I literally cut and pasted teachers' comments - in relation to the subject area and then, within that, to the cross-cutting themes. When the data generated by each of the research tools had been collated, the findings were triangulated and their relationship to the literature review considered.

In this Chapter I have described the final stages of the development of the questionnaire and its administration. I have also given an overview of the process of data manipulation for each of the three research instruments. This chapter has also served as a link between the detailed and lengthy discussion of the development of the classroom observation framework and the analysis of the research findings.

Chapter 6 Analysis of findings

In the previous three Chapters, I have described the development of my research approach and the contribution of Stage 1 to the process. I have also discussed how the design of an appropriate framework for the observation led to some initial analysis of the discourse in Kenyan classrooms; the presentation of my research findings in this chapter therefore builds on this initial analysis. My discussion of the analysis process reflects the triangulated research approach which was adopted by considering the findings from the three instruments and highlighting consensus and contradictions. I begin this chapter by describing, with reference to the lesson transcripts, the typical pattern of classroom interaction which I observed in this study.

As my field notes and the lesson transcripts show, the pattern of classroom interaction varied little between lessons or across the three subjects. Lessons commenced with an introduction by the teachers. This sometimes followed on from an initial greeting to the children, but often the teachers began by referring to what had been learnt in the previous lesson:

> Teacher okay the other time who can remind us of what we learnt? we learnt the other time together what we learnt? Kennedy?
>
> *(Refraction, L1/2)*

> T So in our previous lesson (.) we were discussing about the area of (.) rectangles ( ) no with this (.) figure here (.) what name do we call the figure on the board? Yes?
>
> *(Area of Borders L1/2)*

In most of the lesson which I observed the focus appeared to be a revision of a topic previously taught, rather than the development of a concept or an introduction of new ideas. This focus was confirmed by

58% of the questionnaire sample who said half of the questions they asked in a lesson were for revision purposes. In Avalos' study of classroom practice in thirteen nations, the emphasis on revision of subject content was also noted; she found that 38% of lessons, over 80% of the teacher input was the 're-explaining' of material previously taught (Avalos, 1990).

Following on from the lesson introduction, the teacher would then initiate whole class interaction, the duration of which varied; in two observed lessons, Photography, and Senses, my field notes show that the interaction lasted for only five of the forty minutes. In two other lessons, Words and Pictures, and Discount and Sale Price – it lasted for most of the lesson time. The interaction was based on a teacher-pupil-teacher pattern of turn-taking; this structure is reflected in my adoption of Sinclair and Coulthard's (1975) IRF framework in my observation schedule. In the observed lessons the number of teacher and pupil turns was almost equal (see Figure 6.1), although the number of teacher's turns were slightly higher in thirteen out of the eighteen observed lessons; this was due to the teacher's role in beginning and ending the lesson and comments they made as the children worked.

Figure 6.1 Teacher and Pupil input

ENGLISH

Trans No.	School	Lesson title	Male or Female	Std	Total Teacher	Total Pupil
1	A	New words	Female	3	163	162
2	A	Plurals	Female	5	151	147
3	A	Drama Festival	Female	6	148	146
10	C	Opposites	Female	3	140	137
13	D	Vocabulary	Female	1	158	163
16	E	Words and pictures	Female	1	334	334
18	F	Journeys	Female	3	118	119

MATHS

Trans No.	School	Lesson title	Male or Female	Std	Total Teacher	Total Pupil
4	A	Discount Sale Price	Male	7	109	104
7	B	Volume	Female	4	88	90
8	B	Area of Borders	Male	6	96	96
11	C	Geometry	Female	5	33	31
14	D	Money	Male	4	120	117

SCIENCE

Trans No.	School	Lesson title	M ale or Female	Std	Total Teacher	Total Pupil
5	A	Work and Forces	Male	6	135	136
9	B	Land and Its Uses	Male	4	56	61
12	C	Properties of Matter	Male	5	90	84
15	D	Senses	Female	1	37	35
17	E	Germination	Female	2	87	84
20	F	Refraction	Female	6	71	69

However, the teachers' perceptions of the classroom discourse differed from the reality; when the issue of the balance of teacher and pupil talk was explored in the questionnaire approximately 80% of the teachers 'disagreed' or 'strongly disagreed' with the statement that 'the teacher needs to do most of the classroom talking' (Q3, Appendix 7). They also felt that the level of teacher and pupil talk varied according to the subject being taught; here 71% of the questionnaire sample cited English lessons as requiring more teacher talk than those of maths or science. However, just over 11% of the teachers chose 'Other' as their response to the two questions (Q13 and Q14) on which subjects they felt required most teacher, or most pupil talk. Here teachers endorsed the value of pupil talk or identified subjects other than maths, science or English, as requiring the most pupil talk. Despite these perceptions, Figure 6.1 suggests that the balance of teacher and pupil input in relation to turn-taking was constant in all lessons. Research carried out in Kenya by Juma and Ngome (1998) also found teachers' ideas of variation in the pattern of discourse, according to the curriculum subjects, to be misplaced.

Although the teacher-pupil pattern of turn-taking is a useful indicator of the structure of their discourse, it does not provide insight into its nature; even the duration of the whole class interaction cannot be gleaned by the number of teacher-pupil turns. Therefore, in Stage 2 my analysis of the nature of the discourse was drawn from other dimensions. For the analysis of pupil response, as discussed in Chapter 3, I used three approaches; the first was in relation to whether the response was choral or individual, the second related to the length of the pupil response and the third to the nature of the response.

In relation to the first dimension, the transcripts indicated whether a response was choral or individual and the findings are shown as a percentage of the total pupil input in Figure 6.2 below:

Figure 6.2 Nature of pupil response – choral or individual

ENGLISH

Trans No.	School	Lesson title	M or F	Std	ALL Pupil inputs	Total Choral	% of ALL		Total P individual	% of ALL
1	A	New words	Female	3	162	105	64.8%		57	35.2%
2	A	Plurals	Female	5	147	49	33.3%		100	68.0%
3	A	Drama Festival	Female	6	146	52	35.6%		95	65.1%
10	C	Opposites	Female	3	137	93	67.9%		44	32.1%
13	D	Vocabulary	Female	1	163	99	60.7%		67	41.1%
16	E	Words and pictures	Female	1	334	214	64.1%		120	35.9%
18	F	Journeys	Female	3	119	75	63.0%		47	39.5%
					AVERAGES		55.6%			45.3%

MATHS

Trans No.	School	Lesson title	M or F	Std	ALL Pupil inputs	Total Choral	% of ALL		Total P	% of ALL
4	A	Discount Sale Price	Male	7	104	70	67.3%		34	32.7%
7	B	Volume	Female	4	90	51	56.7%		39	43.3%
8	B	Area of Borders	Male	6	96	25	26.0%		71	74.0%
11	C	Geometry	Female	5	31	24	77.4%		7	22.6%
14	D	Money	Male	4	117	47	40.2%		70	59.8%
					AVERAGES		53.5%			46.5%

SCIENCE

Trans No.	School	Lesson title	M or F	Std	ALL Pupil inputs	Total Choral	% of ALL		Total P	% of ALL
5	A	Work and Forces	Male	6	136	74	54.4%		62	45.6%
9	B	Land and Its Uses	Male	4	61	23	37.7%		38	62.3%
12	C	Properties of Matter	Male	5	84	18	21.4%		67	79.8%
15	D	Senses	Female	1	35	10	28.6%		25	71.4%
17	E	Germination	Female	2	84	54	64.3%		30	35.7%
20	F	Refraction	Female	6	69	31	44.9%		38	55.1%
					AVERAGES		41.9%			58.3%

As Figure 6.2 shows, in the majority of lessons across all three subjects, Choral responses accounted for a significant proportion of pupil input. On average in English lessons, 55.6% of all pupil responses were choral, in Maths it was 53.5% and in Science, 41.9% - an overall average in the three subjects of 50.3%. However, as discussed earlier, the variation in the level of pupil participation in choral responses was of enough significance to merit an additional classification category – Choral Few. The different level of pupil response through the classification of Choral and Choral Few is captured in Figure 6.3; this shows their relative weight in relation to all Choral responses and to the total Pupil responses:

As Figure 6.3 indicates, 53% of all choral responses in science lessons were actually Choral Few. It also shows that there was generally a higher level of participation in choral responses amongst the younger classes, particularly in the teaching of English (School C, D and E).

Figure 6.3 Participation in choral responses

ENGLISH

Trans No.	School	Lesson title	M or F	Std	ALL Pupil inputs	Choral	% of ALL	C Few	% of ALL	Choral % Total Choral	C Few % Total Choral	Added pupil inputs	Margin of error
1	A	New words	Female	3	162	73	45.1%	32	19.8%	69.5%	30.5%	162	0
2	A	Plurals	Female	5	147	25	17.0%	24	16.3%	51.0%	49.0%	149	-2
3	A	Drama Festival	Female	6	146	27	18.5%	25	17.1%	51.9%	48.1%	147	-1
10	C	Opposites	Female	3	137	83	60.6%	10	7.3%	89.2%	10.8%	137	0
13	D	Vocabulary	Female	1	163	87	53.4%	12	7.4%	87.9%	12.1%	166	-3
16	E	Words and pictures	Female	1	334	196	58.7%	18	5.4%	91.6%	8.4%	334	0
18	F	Journeys	Female	3	119	43	36.1%	32	26.9%	57.3%	42.7%	122	-3
		AVERAGES					41.3%		14.3%	71.2%	28.8%		
		MEDIANS					45.1%		16.3%	69.5%	30.5%		

MATHS

Trans No.	School	Lesson title	M or F	Std	ALL Pupil inputs	Choral	% of ALL	C Few	% of ALL	Choral % Total Choral	C Few % Total Choral	Added pupil inputs	Margin of error
4	A	Discount Sale Price	Male	7	104	42	40.4%	28	26.9%	60.0%	40.0%	104	0
7	B	Volume	Female	4	90	43	47.8%	8	8.9%	84.3%	15.7%	90	0
8	B	Area of Borders	Male	6	96	22	22.9%	3	3.1%	88.0%	12.0%	96	0
11	C	Geometry	Female	5	31	11	35.5%	13	41.9%	45.8%	54.2%	31	0
14	D	Money	Male	4	117	37	31.6%	10	8.5%	78.7%	21.3%	117	0
		AVERAGES					35.6%		17.9%	71.4%	28.6%		
		MEDIANS					35.5%		8.9%	78.7%	21.3%		

SCIENCE

Trans No.	School	Lesson title	M or F	Std	ALL Pupil inputs	Choral	% of ALL	C Few	% of ALL	Choral % Total Choral	C Few % Total Choral	Added pupil inputs	Margin of error
5	A	Work and Forces	Male	6	136	39	28.7%	35	25.7%	52.7%	47.3%	136	0
9	B	Land and Its Uses	Male	4	61	23	37.7%	0	0.0%	100.0%	0.0%	61	0
12	C	Properties of Matter	Male	5	84	8	9.5%	10	11.9%	44.4%	55.6%	85	-1
15	D	Senses	Female	1	35	0	0.0%	10	28.6%	0.0%	100.0%	35	0
17	E	Germination	Female	2	84	26	31.0%	28	33.3%	48.1%	51.9%	84	0
20	F	Refraction	Female	6	69	11	15.9%	20	29.0%	35.5%	64.5%	69	0
		AVERAGES					20.5%		21.4%	46.8%	53.2%		
		MEDIANS					22.3%		27.1%	46.25	53.75		

Lack of pupil participation in classroom discourse, as discussed in Chapter 2, may be ascribed by teachers to pupils' lack of confidence in speaking English (Bunyi, 1997). However, if a lack of confidence deters pupils from individually attempting to answer questions, then a high level of participation in choral responses could be anticipated. Yet, the often low level of participation in choral responses suggests that pupil participation is more than an issue of confidence' this is discussed in more detail later.

Teachers' perception of their use of Choral responses, differed from their practice; over 95% of the questionnaire sample said that they only

elicited choral responses on a few occasions, or never at all. This inconsistency was similarly reflected in the interviews, where for example, one teacher described how she disliked choral answers, because they signified *'a lack of discipline'* (*Germination, L78/79*); despite this sentiment, 64% of all pupil responses in the observed lesson were choral. However, as discussed earlier, teachers' responses to questions about the practice could vary according to the phrasing of the question; choral responses would be more likely to be acknowledged if the question did not appear judgemental. Some interviewed teachers, for example, were more positive about choral responses, describing them as a means of providing an opportunity for pupils to 'imitate' and to 'join in' *(Properties of Matter, L18/19*). One teacher also suggested that they could help children to develop confidence,

> T '... the fear ones to get the courage next time when they know the answer they will be able to lift their hands'
>
> *(Money, L43/47)*

However, even where choral responses may encourage some level of pupil participation, the question is at what cost to children's cognitive and linguistic development. Choral responses, by their nature, will be of a low cognitive level and similarly are unlikely to enable children to experiment with ideas or language. It is more probable that individual responses will place higher cognitive and linguistic demands upon the pupils. In this study individual pupil responses accounted for, on average, between 45% and 58% of the total pupil responses across the three subjects. However, other factors which influence pupils' participation make this data misleading. One is that the low teacher:pupil ratio, between 1:45 and 1:75, meant that opportunities for individual children to respond were limited. Secondly, the problem of low participation was further exacerbated by the number of children who raised their hands to respond to a teacher's elicitation; my field notes reflect how in some lessons, only four to five pupils' hands might be raised (*Discount and Sale Price, New Words, The Drama Festival, Work and Forces, Volume*). Rather than challenging this low level of

participation, teachers actually endorsed it through the criteria they applied in selecting a respondent. Just over 50% of the teachers in the questionnaire sample said they selected from amongst the pupils with their hands up (see Figure 6.4 below).

Figure 6.4 Questionnaire – Q25: Criteria for selecting pupil respondent

25	When I have asked a question I generally select a pupil....			
		Total responses to question		357
		No. 1st choices	% of total	Points*
a.	who has their hand up	180	50.42	**749**
b.	who doesn't have their hand up	6	1.68	**204**
c.	who is calling out	5	1.40	**72**
d.	who is not paying attention	66	18.49	**504**
e.	in relation to gender, that is girl boy girl boy	7	1.96	**101**
f.	at random	91	25.49	**466**
g.	Other	2	0.56	**10**

As Figure 6.4 shows, a further 25.5 % of the sample described using 'random' selection procedures - although in my observation it was noted that 'random' selection was carried out in relation to those who had raised their hands; this approach was also endorsed by the interviewed teachers:

> Teacher 'I just choose at random the one I feel like'
> *(New Words, L93)*

> T 'you select any'
> *(Words, L66).*

> T 'I select randomly I select randomly'
> *(Transcript 19, Interview only, L55)*

> T 'I just random'
> *(Properties of Matter, L 98)*

In the interviews teachers described other criteria they used to select a respondent, such as by the ability of the group or according to the class seating arrangement (*New Words, L56-61, Opposites, L29*); although, again my observation suggested that whatever the initial criteria, the

ultimate selection was drawn from pupils who had their hands raised. Some teachers did talk about selecting children who had not raised their hands, as a means of encouraging participation and building their confidence:

> Teacher I just pick I don't pick the ones who has put his hand first because I want everyone to participate and I also want to see those ones who are not following so in most cases I choose those ones who are not participating much.....because I know they are fearing they don't know the answer and I would like to help them'
>
> (*Plurals, L17-20*)

Others talked of selecting those without their hands up to ensure that they *'were concentrating'* (*Journeys, L48*), or to *'...awaken them sometimes'* (*Drama Festival, L85*). This selection of pupils as a 'disciplinary measure'; was endorsed by 18.5% of the questionnaire sample (see Figure 6.4, question 25). Generally, however, my field notes suggest that this practice was unsuccessful, as the children who had not raised their hands were unable to answer the question; again, this implied a lack of understanding rather than a lack of confidence.

The way in which teachers selected respondents actually reinforced the low level of pupil participation; by choosing a child from amongst those with their hands up teachers were not acknowledging that the majority of their class were either not willing, or not able, to contribute to the lesson. In summary, the choral responses, low participation and limited selection criteria meant that although 50% of the responses could be classified as Individual, there was little opportunity for any one child to participate in class discussion. It further illustrates that the observed turn-taking pattern of classroom discourse, as Figure 6.1 might imply, was not one of equity.

The second dimension in my consideration of pupil responses was their word length; here the data generated related to all pupil responses - that is both Choral and Individual. As Figure 6.5 shows, on average, more than half of the responses in each of the three subjects were of one word; 74% of all responses in Science, 61.2% of English and 50.3% in Maths. Although, as it also highlights, there were extremes here; in one English lesson (New Words) 92% of all pupil responses were of one word, as were 86% of the pupil responses in the science lesson, 'Germination'.

Figure 6.5 Pupil response according to word length

ENGLISH

Trans No.	School	Lesson title	M or F	Std	ALL Pupil inputs	1 Word	%	2/3 Words	%	4+ Words	%	Un-clear	%	Reading	%	Added pupil inputs	Margin of error
1	A	New words	Female	3	162	150	92.6%	3	1.9%	1	0.6%	4	2.5%	4	2.5%	162	0
2	A	Plurals	Female	5	147	85	57.8%	13	8.8%	8	5.4%	17	11.6%	25	17.0%	148	-1
3	A	Drama Festival	Female	6	146	65	44.5%	21	14.4%	24	16.4%	13	8.9%	24	16.4%	147	-1
10	C	Opposites	Female	3	137	50	36.5%	36	26.3%	44	32.1%	7	5.1%	0	0.0%	137	0
13	D	Vocabulary	Female	1	163	94	57.7%	39	23.9%	14	8.6%	16	9.8%	3	1.8%	166	-3
16	E	Words and pictures	Female	1	334	283	84.7%	23	6.9%	5	1.5%	6	1.8%	17	5.1%	334	0
18	F	Journeys	Female	3	119	65	54.6%	23	19.3%	15	12.6%	5	4.2%	14	11.8%	122	-3
		AVERAGES					61.2%		14.5%		11.0%		6.3%		7.8%		

MATHS

Trans No.	School	Lesson title	M or F	Std	ALL Pupil inputs	1 Word	%	2/3 Words	%	4+ Words	%	Un-clear	%	Reading	%	Added pupil inputs	Margin of error
4	A	Discount Sale Price	Male	7	104	46	44.2%	35	33.7%	10	9.6%	12	11.5%	0	0.0%	103	+1
7	B	Volume	Female	4	90	62	68.9%	15	16.7%	4	4.4%	5	5.6%	0	0.0%	86	+4
8	B	Area of Borders	Male	6	96	34	35.4%	30	31.3%	12	12.5%	17	17.7%	3	3.1%	96	0
11	C	Geometry	Female	5	31	15	48.4%	10	32.3%	4	12.9%	2	6.5%	0	0.0%	31	0
14	D	Money	Male	4	117	64	54.7%	25	21.4%	22	18.8%	6	5.1%	0	0.0%	117	0
		AVERAGES					50.3%		27.0%		11.7%		9.3%		0.6%		

SCIENCE

Trans No.	School	Lesson title	M or F	Std	ALL Pupil inputs	1 Word	%	2/3 Words	%	4+ Words	%	Un-clear	%	Reading	%	Added pupil inputs	Margin of error
5	A	Work and Forces	Male	6	136	77	56.6%	26	19.1%	13	9.6%	20	14.7%	0	0.0%	136	0
9	B	Land and Its Uses	Male	4	61	45	73.8%	14	23.0%	0	0.0%	2	3.3%	0	0.0%	61	0
12	C	Properties of Matter	Male	5	84	64	76.2%	12	14.3%	5	6.0%	3	3.6%	0	0.0%	84	0
15	D	Senses	Female	1	35	27	77.1%	5	14.3%	1	2.9%	2	5.7%	0	0.0%	35	0
17	E	Germination	Female	2	84	72	85.7%	8	9.5%	0	0.0%	4	4.8%	0	0.0%	84	0
20	F	Refraction	Female	6	69	50	72.5%	6	8.7%	6	8.7%	6	8.7%	0	0.0%	68	+1
		AVERAGES					73.6%		14.8%		4.5%		6.8%		0.0%		

This high level of one-word responses obviously led to a much lower occurrence of the other two categories; two/three word responses accounted for only 14.5% of the pupil responses in English, 14.8% in Science and 27% in Maths. Pupils were even more unlikely to give responses of four words or more; these constituted an average of only

4.5% of all responses in science lessons, 11.7% in Maths and 11.5% in English lessons.

Longer pupil responses in the maths lessons were, as discussed earlier, often numerical. In my coding system, numerical answers were transcribed in full and then each word counted, for example 102 was written as one hundred and two and classified as a four letter word. The occurrence of numerical responses in maths lessons, as shown in Figure 6.12 on page 118, accounted, on average, for 35% of all pupil responses. The nature of these numerical responses is discussed in greater detail later in this chapter.

The data reflected in Figure 6.5 suggests that overall, pupils' opportunity to respond at length to teacher initiations were limited; varying little between the three subjects. Also, contrary to what one might have assumed, there was no significant correlation between the length of pupil responses and their type – i.e. whether they were choral or individual responses. For example in one science lesson, Properties of Matter, although nearly 80% of the responses were individual pupil, 77% of the total pupil inputs were one-word and only 13% were of two/three words. Similarly in another science lesson, Senses, 71% of the responses were from individual pupils, but again a majority of 77% of these responses were of one word, with 14% of two/three words; this could be seen in other lessons too (Money, Area of Borders, Plurals, Drama Festival). It appeared that the only opportunity for longer pupil input occurred in English lessons, when children read aloud. Choral or individual reading occurred in each of the observed English lessons, constituting 18% of pupil input in one lesson (Plurals), but on average 8.3% of all responses.

However, it could be argued that short pupil responses are not a reflection of the intellectual or linguistic demand of the teacher's question; for this reason the third dimension of my analysis framework for pupil response was the nature of their responses. As discussed in Chapter 3, it was Edwards' and Mercer's description of 'cued elicitation' which had helped me to develop the classification of Participative

Strategies; this term was used to describe both the nature of the teacher initiation and the pupil response elicited. For example, a Direct Completion could only be classified as such if the teacher initiated the completion of a sentence or word and the pupil complied:

Teacher the area of the heat is the same as the area which is?

P shaded

(Area of Borders, L69/70)

Four related approaches were encompassed within the term Participative Strategies, each is discussed in greater detail in Chapter 3:

- Direct Repetition (DR)
- Direct Completion (DC) - teacher omission of the last word or words
- Direct Repetition Completion (DRC) - which is a combination of both DR and DC
- Direct Yes or No (DYN) - the elicitation of an affirmative (yes) or negative (no) response.

In exploring the third dimension of pupil response, I analysed the lesson transcripts in relation to their level of Participative Strategies (PS). Figure 6.6 below shows the PS as a total percentage within each lesson and the average level of PS for each subject; it also gives the relative weight of each of the four strategies in relation to the total teacher input and to the category of Participative Strategies as a whole.

Figure 6.6 Teacher input using Participative Strategies

ENGLISH

Trans No.	School	Lesson title	M or F	Std	T Total	DR	%T Total	DR % PS	DC	%T Total	DC % PS	DRC	%T Total	DRC % PS	DYN	%T Total	DYN % PS	PS	%T Total
1	A	New words	Female	3	163	54	33.1%	65.9%	4	2.5%	4.9%	10	6%	12.2%	14	8.6%	17.1%	82	50.3%
2	A	Plurals	Female	5	151	14	9.3%	32.6%	10	6.6%	23.3%	3	2%	7.0%	16	10.6%	37.2%	43	28.5%
3	A	Drama Festival	Female	6	148	9	6.1%	16.7%	25	16.9%	46.3%	9	6%	16.7%	11	7.4%	20.4%	54	36.5%
10	C	Opposites	Female	3	140	63	45.0%	75.0%	6	4.3%	7.1%	14	10%	16.7%	1	0.7%	1.2%	84	60.0%
13	D	Vocabulary	Female	1	158	54	34.2%	70.1%	4	2.5%	5.2%	9	6%	11.7%	10	6.3%	13.0%	77	48.7%
16	E	Words and pictures	Female	1	334	221	66.2%	91.3%	1	0.3%	0.4%	4	1%	1.7%	16	4.8%	6.6%	242	72.5%
18	F	Journeys	Female	3	118	3	2.5%	5.8%	13	11.0%	25.0%	10	8%	19.2%	26	22.0%	50.0%	52	44.1%
								51.0%			16.0%			12.2%			20.8%		48.6%

MATHS

Trans No.	School	Lesson title	M or F	Std	T Total	DR	% T Total	DR % PS	DC	% T Total	DC % PS	DRC	% T Total	DRC % PS	DYN	% T Total	DYN % PS	PS	% T Total
4	A	Discount Sale Price	Male	7	109	10	9.2%	23.3%	16	14.7%	37.2%	4	4%	9.3%	13	11.9%	30.2%	43	39.4%
7	B	Volume	Female	4	88	12	13.6%	30.0%	4	4.5%	10.0%	1	1%	2.5%	23	26.1%	57.5%	40	45.5%
8	B	Area of Borders	Male	6	96	3	3.1%	10.0%	8	8.3%	26.7%	2	2%	6.7%	17	17.7%	56.7%	30	31.3%
11	C	Geometry	Female	5	33	1	3.0%	4.5%	10	30.3%	45.5%	11	33%	50.0%	0	0.0%	0.0%	22	66.7%
14	D	Money	Male	4	120	18	15.0%	52.9%	3	2.5%	8.8%	6	5%	17.6%	7	5.8%	20.6%	34	28.3%
		AVERAGES					8.8%	24.1%		12.1%	25.6%		9%	17.2%		12.3%	33.0%		42.2%

SCIENCE

Trans No.	School	Lesson title	M or F	Std	T Total	DR	% T Total	DR % PS	DC	% T Total	DC % PS	DRC	% T Total	DRC % PS	DYN	% T Total	DYN % PS	PS	% T Total
5	A	Work and Forces	Male	6	135	20	14.8%	27.0%	3	2.2%	4.1%	23	17%	31.1%	28	20.7%	37.8%	74	54.8%
9	B	Land and Its Uses	Male	4	56	6	10.7%	35.3%	1	1.8%	5.9%	2	4%	11.8%	8	14.3%	47.1%	17	30.4%
12	C	Properties of Matter	Male	5	90	2	2.2%	10.0%	5	5.6%	25.0%	2	2%	10.0%	11	12.2%	55.0%	20	22.2%
15	D	Senses	Female	1	37	1	2.7%	10.0%	2	5.4%	20.0%	7	19%	70.0%	0	0.0%	0.0%	10	27.0%
17	E	Germination	Female	2	87	8	9.2%	16.0%	6	6.9%	12.0%	13	15%	26.0%	23	26.4%	46.0%	50	57.5%
20	F	Refraction	Female	6	71	2	2.8%	6.5%	7	9.9%	22.6%	4	6%	12.9%	18	25.4%	58.1%	31	43.7%
		AVERAGES					7.1%	17.5%		5.3%	14.9%		10%	27.0%		16.5%	40.7%		39.3%

See key, below

Key			
PS	Participative Strategy	DRC	Direct Repetition and Completion
DR	Direct Repetition	DYN	Direct Yes or No
DC	Direct Completion		

As the Figure highlights, individual teachers often emphasised particular Participative Strategies. In the English lesson 'New Words', for example, the teacher relied heavily on Direct Repetition (DR); this constituted 66% of the use of Participative Strategies (PS), whereas in the maths lesson 'Area of Borders' the teacher emphasised Direct Repetition Completion (DRC) which accounted for 50% of the PS. Similarly, across the three subjects the weight given to individual participative strategies varied to some extent.

The practice of asking children to complete a sentence was reflected in the two strategies, Direct Completion and Direct Repetition Completion. When these were considered in combination they accounted for 28% of teachers' use of PS in English lessons. In maths lessons the combined strategies accounted on average for 43% of the teachers use of Participative Strategies, and in science for 42% (see Figure 6.6); on average it constituted between 12-21% of all teacher input. These figures indicate that the practice of asking children to complete a sentence was a key Participative Strategy, yet in the questionnaire teachers' perceptions as to their use of the strategy appeared mixed. Just over 49% of the questionnaire sample felt that none, or only a few, of their inputs required

pupils to complete a sentence (DC). Yet, alternatively 37% of the teachers felt that either a lot, or all of the questions they asked were of this type; as shown in Figure 6.7. However, the question may not have been understood and therefore no conclusive statement can be made here about differences between teachers' perceptions and their practice.

Figure 6.7 **Questionnaire - Q18: questions requiring Direct Completion (DC)**

18	How many of the questions which you ask require pupils to finish a sentence?			
		Total responses to question		359
		No. responses	%	
1	None	21	5.85	
2	A few	155	43.18	
3	Half of them	50	13.93	
4	A lot	97	27.02	
5	All	36	10.03	

Questions which elicited a yes or no response from the pupils were on average 21% of the Participative Strategies used in English lessons, 33% in maths and 41% in science lessons (see Figure 6.6) and between 9-16% of all teacher input. Again these findings were contradicted to some extent by the questionnaire response, where 86% of the sample said that they asked very few, or none, of this type of question.

The practice of asking children to directly repeat something (DR) was not addressed in the questionnaire. It is generally acknowledged by Kenyan educators to be a practice to avoid and I felt teachers might give a formulaic response to any question relating to it. However, Direct Repetition (DR) was observed in all three subjects; it was most prevalent in English lessons, for example in one lesson – Words and Pictures – it constituted 66% of all the teacher's input. Teachers in some English lessons used repetition to such an extent that it appeared almost a parody of the practice, as exemplified in the following example:

Teacher	*(pointing to board)*
Choral	excited
T	excited
Choral	excited
T	repeat again
Choral	excited

T	here
Choral	excited
T	repeat
Choral	excited
T	this group here
C few	excited
T	excited
C few	excited
T	and the other one
C Few	excited
T	repeat
C few	excited
T	repeat
C Few	excited
T	and that one
C Few	excited
T	again
C few	excited

(*New Words, L57/80*)

This discourse pattern was maintained throughout the lesson and was also the format for four other observed English lessons (New Words, Words, Opposites, Plurals). In science and maths there was less use of Direct Repetition, although it still accounted for an average of 26% of the Participative Strategies in maths lessons and 12% of the total teacher input. In science lessons, 15% of all Participative Strategies were Direct Repetition, which constituted 7% of the teacher input.

Teachers who were interviewed, however, did talk quite openly about their use of repetition, with several giving their rationale for asking children to repeat certain words or phrases. One teacher explained that repetition '*gets inside their minds*'...so that the children don't forget it (*Refraction, L68/70*). Similarly the teacher of younger children commented that if the pupils

> '...repeat the word maybe several times like the word

> germination again say germination of seeds they will
> remember tomorrow germination and even at sometimes
> if I want them to really get the word I can write the
> word in bits'
> (*Germination, L90-92*)

In English teaching the rationale was strongly linked to its perceived value in supporting children's pronunciation; as one teacher pointed out children '*can learn how to speak English by saying*' (*Words, L59*). Another interviewed teacher described how she asked the pupils to '*repeat repeat again because it's very hard for them*' (*New Words, L20*).

The teachers' use of Participative Strategies to elicit a pupil response resulted in the verbal interaction between the teacher and pupil - which Vygotsky, (1962) describes as crucial for the development of children's thinking - being most often only cursory. Alternatively adopting Participative Strategies enabled the teachers to control the discussion, direct their pupils' thought and action and establish shared attention. Edwards and Mercer (1995) talk of such strategies as the teachers' 'discursive weaponry'. One other strategy observed in this study to maintain children's attention was the use of 'pseudo' questions – this, as discussed in Chapter 3, is where teachers raises their voice mid-sentence to imply a question. 'Pseudo' questions were a common practice in Kenyan classrooms and were also often adopted by the facilitators of adult learning at Ministry run workshops. In this study an average of between 30 - 50 of this type of question were asked across the three subjects, although teachers used this strategy more in English and maths lessons. In one English lesson - Drama Festival - the teacher raised 56 'pseudo' questions in a total of 148 teacher inputs and in the science lesson, Senses there were 73 such questions out of only 88 teacher inputs.

Teacher questions

The categorisation for teacher questions developed in this study also related, to some extent, to both the teacher's question and the pupil's response. Questioning, as discussed in Chapter 2, is a key teaching skill

and can help to motivate, sustain, and direct the thought processes of children (Wood, 1992). In this study, questions were defined as teacher elicitations which were more cognitively or linguistically demanding than Participative Strategies. Three categories were developed to describe the type of questions - Factual Narrow (FN), Factual Broad (FB) Thought/Reasoning (T/R); these were discussed more fully in Chapter 3.

For each observed lesson, the total number of questions were calculated as a percentage of the overall teacher input and then the question types were calculated as a percentage of the total number of questions - see Figure 6.8. As with all the observation data the highest and lowest occurrence and the mode and median[5] were also identified; this provided another, often useful, perspective.

Figure 6.8 Teacher input - questions, highest, lowest and average by subject

	Total input	Question (Q)	FN	FB	T or R
ENGLISH		**% of Total**	**% of Q**	**% of Q**	**% of Q**
Highest	334	20.9	95.2	41.2	5.6
Lowest	118	5.1	58.8	4.8	0.0
Average	**173.1**	**12.9**	**73.4**	**25.7**	**0.8**
MATHS					
Highest	120	55.0	91.3	80.0	3.4
Lowest	33	15.2	20.0	8.7	0.0
Average	**89.2**	**32.8**	**69.6**	**29.7**	**0.7**
SCIENCE					
Highest	135	31.0	75.0	72.0	4.3
Lowest	37	16.1	28.0	25.0	0.0
Average	**79.3**	**23.9**	**54.9**	**44.4**	**0.7**

As Figure 6.8 shows, fewer questions were asked in English lessons with an average of only 13% of all teacher inputs including a question. In Maths' lessons 33% of all teacher input involved a question, whereas in science lessons, questions accounted for an average of 24% of all teacher input. In the questionnaire, 74% of the sample said they asked questions either often, or most of the time. No distinction was of course made by teachers between Participative Strategies and Questions, so the

questionnaire response actually reflected a realistic estimation of the combined number of Participative Strategies and Questions.

The main rationale teachers gave for asking questions was, according to 79% of the questionnaire sample, to check pupils' understanding. This finding is endorsed by the work of Hargie (1978), discussed in Chapter 2, who described the two main purposes of teacher questions as checking on pupils' learning or their ability to recall facts. In this study, questions which required the recall of facts were described as Factual Narrow or Factual Broad. As Figure 6.9 shows, 99% of all questions in the three subjects were Factual, of which between 55-74% of these were Factual Narrow:

Figure 6.9 Teacher questions, data for all lessons

ENGLISH

Trans No.	School	Lesson title	M or F	Std	T Total	Q+	% of Total	FN	% of Q	FB	% of Q	T/R	% of Q
1	A	New words	Female	3	163	14	8.6%	9	64.3%	5	35.7%	0	0.0%
2	A	Plurals	Female	5	151	21	13.9%	20	95.2%	1	4.8%	0	0.0%
3	A	Drama Festival	Female	6	148	31	20.9%	21	67.7%	10	32.3%	0	0.0%
10	C	Opposites	Female	3	140	22	15.7%	16	72.7%	6	27.3%	0	0.0%
13	D	Vocabulary	Female	1	158	17	10.8%	10	58.8%	7	41.2%	0	0.0%
16	E	Words and pictures	Female	1	334	17	5.1%	16	94.1%	1	5.9%	0	0.0%
18	F	Journeys	Female	3	118	18	15.3%	11	61.1%	6	33.3%	1	5.6%
							12.9%		73.4%		25.8%		0.8%

MATHS

Trans No.	School	Lesson title	M or F	Std	T Total	Q+	% of Total	FN	% of Q	FB	% of Q	T/R	% of Q
4	A	Discount Sale Price	Male	7	109	41	37.6%	33	80.5%	8	19.5%	0	0.0%
7	B	Volume	Female	4	88	23	26.1%	21	91.3%	2	8.7%	0	0.0%
8	B	Area of Borders	Male	6	96	29	30.2%	19	65.5%	9	31.0%	1	3.4%
11	C	Geometry	Female	5	33	5	15.2%	1	20.0%	4	80.0%	0	0.0%
14	D	Money	Male	4	120	66	55.0%	60	90.9%	6	9.1%	0	0.0%
							32.8%		69.6%		29.7%		0.7%

SCIENCE

Trans No.	School	Lesson title	M or F	Std	T Total	Q+	% of Total	FN	% of Q	FB	% of Q	T/R	% of Q
5	A	Work and Forces	Male	6	135	25	18.5%	7	28.0%	18	72.0%	0	0.0%
9	B	Land and Its Uses	Male	4	56	17	30.4%	11	64.7%	6	35.3%	0	0.0%
12	C	Properties of Matter	Male	5	90	23	25.6%	13	56.5%	9	39.1%	1	4.3%
15	D	Senses	Female	1	37	8	21.6%	6	75.0%	2	25.0%	0	0.0%
17	E	Germination	Female	2	87	14	16.1%	9	64.3%	5	35.7%	0	0.0%
20	F	Refraction	Female	6	71	22	31.0%	9	40.9%	13	59.1%	0	0.0%
							23.9%		54.9%		44.4%		0.7%

Although the majority of questions asked in each subject were Factual Narrow, their role and function differed to some extent; teachers questions are therefore discussed below in relation to each subject area.

Questions – English

It was in English lessons that Factual Narrow (FN) questions were the most prevalent, constituting an average of 73% of the total number of questions; in one particular lesson, (Plurals) 95% of the questions asked were Factual Narrow.

Figure 6.10 Questions in English (extracted from Figure 6.9)

ENGLISH

Trans No.	School	Lesson title	M or F	Std	T Total	Q+	% of Total	FN	% of Q	FB	% of Q	T/R	% of Q
1	A	New words	Female	3	163	14	8.6%	9	64.3%	5	35.7%	0	0.0%
2	A	Plurals	Female	5	151	21	13.9%	20	95.2%	1	4.8%	0	0.0%
3	A	Drama Festival	Female	6	148	31	20.9%	21	67.7%	10	32.3%	0	0.0%
10	C	Opposites	Female	3	140	22	15.7%	16	72.7%	6	27.3%	0	0.0%
13	D	Vocabulary	Female	1	158	17	10.8%	10	58.8%	7	41.2%	0	0.0%
16	E	Words and pictures	Female	1	334	17	5.1%	16	94.1%	1	5.9%	0	0.0%
18	F	Journeys	Female	3	118	18	15.3%	11	61.1%	6	33.3%	1	5.6%
							12.9%		73.4%		25.8%		0.8%

Teachers in English lessons asked children Factual Narrow questions which required them to name objects, spell words, apply a grammatical rule, or answer a simple comprehension question. These Factual Narrow questions most often elicited a one-word pupil response, for example:

T what is the opposite of good?

P bad

(*Opposites, L172/173*)

However, in some lessons the teacher would encourage a response in a full sentence:

T tell them this is?

P this is a packet of tea

(*Words and Pictures, L50/51*)

Alternatively, an average of 26% of all teacher questions in English lessons were Factual Broad. These were, as discussed in Chapter 3, less closed and slightly more cognitively demanding than Factual Narrow questions, for example:

T who who can tell us what is a forest? you don't know what is forest?.....

P where trees growing together

(*Journeys, L234/236*)

The third category of questions, Thought/Reasoning, occurred rarely - less than 1% of all teacher questions in English lessons, which was one question in seven lessons. In the extract below the teacher raised a Thought/Reasoning question during a review of a comprehension passage:

T can you think of other times when we say good luck to someone other times apart from that time...

P if somebody go to another country

T when somebody is travelling to another country to America or Europe the time he or she is leaving you wish her good luck any other so many of them yes

(*Drama Festival L210/213*)

This question elicited a relatively full pupil response, which the teacher elaborated on by introducing the word 'travelling' and then giving examples of countries where people might travel to. As other hands were raised the teacher asked for more responses to the same question; these elicitations I classified as Teacher Continuation (TC), (see Chapter 3) as the teacher did not actually repeat the original question - for example:

T any other you may think of yes

(*Drama Festival, L223*)

The lively interaction which resulted from the original Thought/Reasoning question provided the pupils with the opportunity to share their own experience and this in turn initiated fuller responses. There were also other examples of teachers eliciting longer responses by asking Factual Broad questions (New Words, Journeys, Drama Festival, Vocabulary). Overall, however, teachers in English lessons did not ask either Factual Broad or Thought/Reasoning questions. Alternatively they employed Participative Strategies, asked Factual Narrow questions and elicited Choral responses; the outcome of which was a high level - an average of 61% - of one-word pupil responses. Longer responses in

English lessons were often the result of children reading aloud. Even where teachers used teaching aids in their English lessons (Opposites, Plurals, Words, New Words) - in order, as one teacher explained, to provide 'oral practice (Plurals, L77/78) - their emphasis was still on pupil repetition.

Questions – maths

Overall more questions were asked in maths lessons than in English or Science, but these were still dominantly Factual Narrow; an average of 69% and a median of 87.5%[6] of all questions asked were Factual Narrow, see Figure 6.11:

Figure 6.11 Questions in maths (extracted from Figure 6.9)

MATHS

Trans No.	School	Lesson title	M or F	Std	T Total	Q+	% of Total	FN	% of Q	FB	% of Q	T/R	% of Q
4	A	Discount Sale Price	Male	7	109	41	37.6%	33	80.5%	8	19.5%	0	0.0%
7	B	Volume	Female	4	88	23	26.1%	21	91.3%	2	8.7%	0	0.0%
8	B	Area of Borders	Male	6	96	29	30.2%	19	65.5%	9	31.0%	1	3.4%
11	C	Geometry	Female	5	33	5	15.2%	1	20.0%	4	80.0%	0	0.0%
14	D	Money	Male	4	120	66	55.0%	60	90.9%	6	9.1%	0	0.0%
							32.8%		69.6%		29.7%		0.7%

The Factual Narrow questions raised in maths lessons reflected the practice, highlighted earlier, of teachers breaking down the mathematical concept, or topic into small, easily digestible pieces. This is illustrated in the following extract from a Standard 6 class (12 years old):

T 45 plus 6

P 51

T 51 7 times 4 times

P 28

(*Area of Borders, L240/243*)

Teachers particularly relied on numerical responses where the underlying concept in the maths lessons was of a higher level, for example in 'Area of Borders', 'Volume', 'Discount and Sale Price'. In this study, as discussed earlier in this chapter, I had developed the sub-category of Numerical Responses to capture this practice. This classification was based on the nature of the children's response, not the question itself, as Numerical responses could be elicited by either Participative Strategies,

Factual Narrow, Factual Broad and Thought/Reasoning questions; however, in practice they were more likely to be elicited by Participative Strategies and Factual Narrow questions. The category was developed so that the longer pupil responses in some of the maths lessons did not generate misleading data; numerical responses accounted for an average of 35% of all pupil responses, and in one lesson - Money - 68.4% of all pupil responses were numerical. Pupils' numerical responses, as shown in Figure 6.12 below, could be either Choral or Individual:

Figure 6.12 Numerical responses in maths

MATHS						Numerical responses					
Trans No.	School	Lesson title	M or F	Std	ALL Pupil inputs	% of ALL Pupil		% of Total Choral		% of Total Pupil Individual	
4	A	Discount Sale Price	Male	7	104	37	35.6%	31	44.3%	6	17.6%
7	B	Volume	Female	4	90	29	32.2%	9	17.6%	20	51.3%
8	B	Area of Borders	Male	6	96	29	30.2%	8	32.0%	21	29.6%
11	C	Geometry	Female	5	31	2	6.5%	1	4.2%	1	14.3%
14	D	Money	Male	4	117	80	68.4%	24	51.1%	56	80.0%
		AVERAGES					34.6%		29.8%		38.6%

Several teachers explained that their emphasis on asking questions which elicited numerical responses, was because of pupils' perception of maths as a difficult subject (Area of Borders, L62/63; Discount and Sale Price, L89). One teacher felt that the pupils' reluctance to reason caused the problem in maths, he explained,

> ' ...you know some how they don't like reasoning that is the problem reasoning that is a problem they like to be given something direct'
> (*Discount and Sale Price, L97/98*)

When asked to elaborate on this the teacher described how the children liked 'direct' questions, those which are not given in 'statement form', but rather presented as 'simple calculations', for example *'they bring it like ten plus twenty'* (ibid, L101/102). Another teacher described how maths lessons '*demanded more of the children than they wanted to give'* and talked of the need to '*push and pressurise*' the children, so that '*they can actually realise*' that the subject is not as hard as they think it is (*Area of Borders, L67/68*).

It was as if when faced with teaching more complex mathematical concepts, the teachers relied on Factual questions, or Participative Strategies, based on simple calculations, to move the lesson forward. By asking Factual Narrow questions and employing Participative Strategies, maths teachers were ostensibly 'covering' the more complex areas of the mathematics curriculum. However, this practice meant that few linguistic demands were made on the children and they were similarly deprived of the opportunity to develop mathematical understanding at an appropriate conceptual level. Furthermore, it was not just detrimental to their mathematical development, but did not even enable the pupils to succeed within the remit of the Kenyan examination system. This tension was directly acknowledged by one interviewed teacher, who described how his own teaching strategy - of asking mainly 'direct' questions - conflicted with that of the KCPE examination which consisted of 'more tricky' questions, which required pupils to reason *(Discount and Sale Price, L104)*.

Factual Broad questions, the second category used to classify teacher questions, accounted for on average 29% of teacher questions in maths lessons. These questions usually elicited longer and more thoughtful pupil responses, for example:

T yes they are parallel what do we mean by the word parallel? what do we say there are parallel? what do we mean? who can remember?
P the two lines will never meet
T the lines will never?
C few meet
(Geometry, L36/40)

Another example of a Factual Broad question occurred in the lesson 'Area of Borders'; here the teacher was asking questions about a diagram he had drawn on the chalkboard:

T you get 120cm square that's the are (.) now I am going to draw another rectangle inside

	the big one (.) in our rectangle it measures 9 cm x 5cm (.) we shade this one (.) so tell me which area is shaded?yes?
P	the small area
T	the small area the small rectangle inside the big one which is 9 by?

(*Area of Borders, L15/19*)

However, although in the above examples the Factual Broad questions elicited a more thoughtful response the teachers did not take the opportunity to further probe the pupil's response; a strategy would might have helped them to ascertain the pupil's understanding as well as explore that of the other pupils.

As with the other two subjects, the third category of questions - Thought/Reasoning - accounted for a very low percentage (1.5%) of all teachers' maths questions; in total this was a single question in one lesson. The extract below shows how the teacher raised a Thought/Reasoning question to clarify a pupil's response; in this example the teacher appears to be making a genuine enquiry as to how the answer had been reached:

P	it is 55 plus 2
T	where do you get 2?
P	this from from the (.) plus em school compound to the road plus em the road is one plus yes another side is one it becomes 2, 55 + 2 = 57
T	so this will be 57?
P	yes
T	very good yes we have 1 metre here so if you add here it will be 55 + 2 metres equals 57 somebody else now give us the width.....

(*Area of Borders, L222/229*)

Here the emphasis of the teacher's question was on the elicitation of a mathematical explanation, for which the language provided the vehicle, rather than being the focus. As Mayor (1994) argued, in experimenting with language it doesn't matter if linguistic errors are made, if the meaning is clear. Not only did the teacher's question appear to help the individual child to consolidate her own thinking, but the explanation it initiated could have helped to scaffold the thinking of her peers. Unfortunately, such opportunities for children to explain their ideas were rare; their responses were more often limited by the predominance of Participative Strategies, and Factual Narrow questions.

Questions – science

It was in the observed science lessons, where the most varied questioning strategies were applied with an overall 24% of the teacher input being classified as questions. As Figure 6.13 below shows, of these, Factual Narrow questions accounted on average for 55% of the total number of questions asked, Factual Broad for 44.4% and Thought/Reasoning for only 0.7%.

Figure 6.13 Questions in science (extracted from Figure 6.9)

Trans No.	School	Lesson title	M or F	Std	T Total	Q+	% of Total	FN	% of Q	FB	% of Q	T/R	% of Q
5	A	Work and Forces	Male	6	135	25	18.5%	7	28.0%	18	72.0%	0	0.0%
9	B	Land and Its Uses	Male	4	56	17	30.4%	11	64.7%	6	35.3%	0	0.0%
12	C	Properties of Matter	Male	5	90	23	25.6%	13	56.5%	9	39.1%	1	4.3%
15	D	Senses	Female	1	37	8	21.6%	6	75.0%	2	25.0%	0	0.0%
17	E	Germination	Female	2	87	14	16.1%	9	64.3%	5	35.7%	0	0.0%
20	F	Refraction	Female	6	71	22	31.0%	9	40.9%	13	59.1%	0	0.0%
							23.9%		54.9%		44.4%		0.7%

Factual Narrow questions in science lessons required children to give descriptions, often of a concept which the teacher was actually demonstrating, for example:

T ……if you lift something up you are also doing what?

C Few work

(Work and Forces, L101/103)

T this is a solid what about this pen of mine?

Choral solid

(*Properties of Matter, L97/98*)

Or, they required pupils to answer simple recall questions, for example

T where do we get milk from

(*Land and its Uses, L92*)

T ...how many seeds does a mango have?yes?

(*Germination, L45*)

A higher proportion of the questions in science lessons were Factual Broad than in the other two subjects; on average they constituted 44.5% of the total number of questions. In one lesson, Work and Forces, 72% of all the questions asked were Factual Broad, and here the teacher used different approaches to formulate the questions. In one instance, he reinforced a simple demonstration he had just carried out:

T so that is a push?yes that one I have done eh good (.) what is happening? What have I done?

P you are pushing the desk

(*Work and Forces, L41/43*)

This served not only to directly link everyday language with familiar action, but also to link the pupils' first hand experience with a scientific explanation.

Later in the same lesson, the teacher asked the pupils to think about the time it would take to cycle or walk from a known local place, again linking children's own experience and the scientific concept being taught:

T we start at the same time who will be here earlier than the other?

P the one who is using a bicycle

(*ibid, L80/81*)

A third strategy which this science teacher adopted in formulating a Factual Broad question was to reinforce a correct answer by challenging the children and in the process evoking humour:

T to do what?why don't you use razor blade? (laughter) why don't you use a razor blade?can you tell me why why why don't you use razor blade you said panga but I think I should use razor blade

P because razor blade is too small

(ibid *L331/334*)

All three examples given above highlight the greater demands of Factual Broad questions on pupils' conceptual thought and language. Although overall the participation in this particular lesson was poor, when a Factual Broad question was asked it encouraged pupils to give longer and more thoughtful responses.

In science lessons, as in maths and English, Thought/Reasoning questions featured rarely; only one was noted in the five observed lessons. This occurred in the middle of a lesson where the teacher had been relying heavily on Participative Strategies (23%) and Teacher Continuation (39%) to move the children through the topic 'Properties of Matter':

T there is also another state of matter that you did not mention but we feel that is there we feel is there that is why we are putting on sweaters which type of this?am talking about?

P liquids

T liquids very good yes?

(*Properties of Matter, L76/78*)

Despite there being only one correct answer to this question (and not the one given!), it did demand slightly more of the pupils than a Factual Broad question; it required them to relate their everyday experience to the scientific phenomena of 'matter'. However, the way in which it was

structured, like the other teacher initiations, resulted in only a one or two-word pupil response; 76% of pupils' responses in this lesson were one-word.

An important consideration in the occurrence of teacher questions in science lessons was their relationship to the elicitation strategy of Teacher Continuation (TC). As discussed earlier, I had developed the term Teacher Continuation to describe teachers' practice of eliciting more than one response to an initial question, without actually repeating the original question, for example:

T	can you tell me in order the animal that gives us milk	
Choral	teacher teacher teacher	
T	yes	(TC)
P	cow	
T	yes kamoja kwa yeye yes very good	(TC)
P	camel	
T	camel yes another one	(TC)
P	hen	

(*Land and its Uses, L95/103*)

T	the sun mention any other example of a solid	
P	table	
T	table	(TC)
P	doors	
T	doors	(TC)
P	biscuits	
T	biscuits are solid what else?	(TC)

(*Properties of Matter, L194/204*)

On average in all the observed science lessons, 23% of teacher input could be classified as Teacher Continuation (TC); in four of the six lessons this discourse strategy occurred as frequently as Questions; both strategies together constituting on average half of all teacher input. In science lessons, therefore, the total number of questions asked was

actually much higher than the data initially indicates. In three lessons the use of TC increased the percentage of teachers questions as follows: Land and its Uses - 60% of all teacher input included a question; Properties of Matter - 64% of all input was a question and in Senses - 54% of all teacher input was a question. Teacher Continuation could be derived from either a Factual Narrow or a Factual Broad question – although the former was more likely.

Pupils were not observed in any science lessons undertaking practical work themselves and were therefore had no opportunity to raise their own questions, particularly those related to the scientific process skills, such as prediction and analysis. The role of the teachers' questions in science lessons - as in English and maths - seemed to be to prevent the pupils from being confronted with cognitively demanding ideas. Teachers in the observed lessons did use demonstration, but only in one lesson – Work and Forces - did it appear to give rise to more emphasis on Factual Broad questions. Overall, as with the use of teaching aids in English and Maths lessons, teacher demonstration contributed to the same pattern of classroom interaction.

In the interviews, however, the science teachers talked positively about pupils' perception of science. Unlike their maths' colleagues, they did not think that children were reluctant to apply themselves to science; alternatively some of the teachers described how the practical nature of science made the lessons enjoyable for the children (Land and its Uses, Work and Forces). Yet despite this interest, the teachers still relied to a large extent on Participative Strategies and Factual Narrow questions, rather than trying out different teaching approaches and discourse strategies.

Teacher feedback strategies

If as this study suggests, the emphasis of Teacher Initiation is on Participative Strategies and Factual Narrow Questions, then the role of Teacher Feedback is even more crucial. Through feedback, teachers can help to motivate children, scaffold their thinking and create links between

their existing experience and new ideas and scientific concepts. As discussed in Chapter 3, teacher feedback strategies in this EdD study were classified as Praise, Explanation, Repeat Question and Repeat Answer. The occurrence of the four strategies in each observed lesson, and the average within each subject as a whole, are shown below:

Figure 6.14 Teacher feedback

ENGLISH

Trans No.	School	Lesson title	M or F	Std	T Total	RA		E		P (praise)		RQ	
1	A	New words	Female	3	163	43	26.4%	10	6.1%	1	0.6%	1	0.6%
2	A	Plurals	Female	5	151	31	20.5%	24	15.9%	18	11.9%	10	6.6%
3	A	Drama Festival	Female	6	148	43	29.1%	25	16.9%	0	0.0%	12	8.1%
10	C	Opposites	Female	3	140	20	14.3%	18	12.9%	1	0.7%	7	5.0%
13	D	Vocabulary	Female	1	158	24	15.2%	10	6.3%	4	2.5%	2	1.3%
16	E	Words and pictures	Female	1	334	18	5.4%	12	3.6%	34	10.2%	0	0.0%
18	F	Journeys	Female	3	118	26	22.0%	21	17.8%	1	0.8%	1	0.8%
		AVERAGES					19.0%		11.4%		3.8%		3.2%

MATHS

Trans No.	School	Lesson title	M or F	Std	T Total	RA		E		P (praise)		RQ	
4	A	Discount Sale Price	Male	7	109	40	36.7%	38	34.9%	3	2.8%	4	3.7%
7	B	Volume	Female	4	88	15	17.0%	33	37.5%	10	11.4%	9	10.2%
8	B	Area of Borders	Male	6	96	23	24.0%	42	43.8%	5	5.2%	7	7.3%
11	C	Geometry	Female	5	33	14	42.4%	12	36.4%	3	9.1%	0	0.0%
14	D	Money	Male	4	120	13	10.8%	26	21.7%	3	2.5%	5	4.2%
		AVERAGES					26.2%		34.8%		6.2%		5.1%

SCIENCE

Trans No.	School	Lesson title	M or F	Std	T Total	RA		E		P (praise)		RQ	
5	A	Work and Forces	Male	6	135	26	19.3%	49	36.3%	11	8.1%	10	7.4%
9	B	Land and Its Uses	Male	4	56	24	42.9%	20	35.7%	12	21.4%	1	1.8%
12	C	Properties of Matter	Male	5	90	57	63.3%	25	27.8%	8	8.9%	0	0.0%
15	D	Senses	Female	1	37	16	43.2%	1	2.7%	13	35.1%	0	0.0%
17	E	Germination	Female	2	87	27	31.0%	30	34.5%	7	8.0%	1	1.1%
20	F	Refraction	Female	6	71	24	33.8%	26	36.6%	0	0.0%	7	9.9%
		AVERAGES					38.9%		28.9%		13.6%		3.4%

As Figure 6.14 shows, Praise was employed little by teachers - on average 4% of teacher input in English lessons included praise, in maths lessons 6% and in science lessons 14%. In the questionnaire, the Kenyan teachers also endorsed this lack of emphasis on praise as an initial feedback strategy; only 16% of the questionnaire sample felt that their initial response to a correct pupil answer would be to give praise.

Greater importance was, however, ascribed to praise in the interviews; as one teacher explained,

> 'you have to reward the child so that is an encouragement'
>
> (*Transcript 19, Interview only, L71*)

Another teacher described how when

> 'they get the correct answer eh there is a clap for the winners'
> (*Words, L92*)

Class clapping for a correct answer was a strategy mentioned by several of the interviewed teachers - Plurals, Germination, Land and its Uses - but its application was only endorsed by 3.4% of the questionnaire sample.

As discussed in Chapter 3, the role of praise in encouraging and motivating pupils is debatable. However, if the teacher is explicit about why a child's response merits praise, it can help to support the cognitive and linguistic development, not only of the pupil but also of other pupils in the class. Similarly, praise can be used as a springboard to challenge, or to probe the children's thinking. However, neither of these strategies were observed in this study; alternatively teachers used praise in the following ways:

They would invite the class to clap without giving any comment on the pupils' response:

> T okay clap for her
> (*Words, L57*)

Or, they would give praise and move immediately on to another pupil:

> P fish
> T good Katana
> P fish
> (*New Words, L171*)

Praise sometimes served as both teacher feedback and elicitation, for example:

> P calabashes
> T calabashes very good can you spell for us the word calabashes?
> (*Plurals, L 124*)

Or, praise was used to elicit a pupil repetition of an answer:

T hooves very good we don't call them hoo ves we call them what?

(Plurals, L180)

Although the interviewed teachers stressed the importance of praise, in practice it was not easily facilitated by the overall structure of the classroom discourse. With the low demands made on the pupils through the use of Participative Strategies and the elicitation of choral answers, it was unlikely that pupil responses would warrant teacher praise. The following comment by one teacher perhaps encapsulates the paradox teachers faced between their ideas of good practice and the reality of the classroom:

T I am suppose(d) to reward orally maybe good very good excellent sometimes like that though this time I could not use those comments but that is what I am supposed to do

(Discount and Price, L38/39)

Another feedback strategy identified in the questionnaire was the teacher asking the class if the pupil's response was correct; this practice would be likely to stimulate classroom interaction and help to make it less teacher dependent. Just over 40% of the questionnaire sample said they used this strategy to provide initial feedback to a correct pupil response, and 27% of the sample said they used it as feedback to an incorrect answer. However, the strategy was rarely seen in the observed lessons and therefore did not ultimately form part of my observation framework. Similarly, there was a contradiction between teachers' perceptions and their observed practice in relation to their repetition of questions. If a question was not answered, or it was answered incorrectly, 29% of the questionnaire sample said they would repeat the question, but in the observed lessons in all three subjects, 'Repeated Questions' accounted on average for less than 5% of the teacher input. I realised that this mismatch between teachers' practice and their perceptions was because of

their emphasis on Participative Strategies and Factual Narrow questions; this ensured that there were few 'wrong' answers and teachers therefore rarely had to repeat questions.

One feedback strategy which was endorsed in both the questionnaire and the observed practice was that of repeating the pupil' correct answer. In the questionnaire 28% of the teachers felt this was their most typical feedback strategy and the overall points allocated to this response (399) reflects that it was also the second or third choice of many of the teachers. My own observation reinforced the teachers' perception of the regularity of this practice; in science lessons an average of 40% of teachers' input included a repetition of the pupil answer - in one lesson it occurred 63% of the time (Properties of Matter). Repetition of pupil responses constituted on average 26%, of teachers' input in maths lessons, and in English lessons it accounted for 19%. Other studies have suggested that teacher repetition of a pupil answer is an indication of an incorrect response (Edwards and Mercer, 1995). However, this was rarely its purpose in Kenyan classrooms where, it served alternatively as an endorsement of a correct answer. By repeating the pupils' answer the teacher could use this feedback strategy to move on with their explanation.

As discussed in Chapter 4, teachers' explanations were a key feedback strategy and in this study the term 'explanation' encompassed, teacher rephrasing, elaborating and evaluating. Explanations occurred most frequently where there was 'content' to be covered; for example in science lessons they occurred in 29% of teacher input and in maths, 35%. Alternatively, in English lessons they constituted on average only 11% of teacher input; this reflected the emphasis on vocabulary, repetition, pronunciation and comprehension of passages, rather than on understanding, meaning and fluency. One-third of the questionnaire sample endorsed the use of explanation; many teachers also chose 'elaboration' on a child's response as their second or third most likely feedback strategy. A further 14% of the sample said they would 'rephrase the pupil's answer'.

Teacher explanations were not, as discussed earlier, always easy to follow; one reason for this was that they were often interspersed with repetition and 'pseudo' questions. Teachers' use of a rise in voice intonation mid-sentence, may have been a strategy to maintain children's attention, however, in practice it led to convoluted and often confusing explanations, for example:

T so so if you are told to cut ( ) are we through?if you are told to cut a number of layers according to the you can be asked how many layers do I have?how many layers do I have here?how many layers do I have?how many layers?what are you supposed to cut just this parts one two three okay?so my cube has how many layers?my cube has how many layers?

P three layers

(*Volume, L52*)

Similarly, as described in Chapter 4, explanations were used to link teacher feedback to initiation, which meant that any aspect of the explanation, even if only a minor aspect of the overall topic, could become the focus of a teacher question or a participative strategy - for example:

T haya we have other big settlement scheme ( ) where people are given land for example we have a place called Mwea Tabera say Mbea Tabera

Choral Mbea Tabera

(*Land and its Uses, L63/65*)

Another issue which affected the clarity of explanations was the way in which the teachers strove to simplify the input they provided. This was particularly so in English lessons with their emphasis on pronunciation and repetition, but also in maths lessons with the demand for children to carry out low level calculations. By trying to simplify their input, the

overall coherence could be lost. Explanations in the observed lessons therefore rarely fulfilled the criteria which Wragg and Brown expound, that is that they should be clearly structured, present a sequence of ideas, possess linked statements and emphasise central concepts (Brown, 1978).

One factor affecting the clarity of teacher explanations may have been their level of confidence in the subject matter. In order to explain something well it is important to have an understanding of the concept and the difficulties it might present. In the following extract, I was doubtful about this teacher's understanding of the concept; this doubt was reinforced by the timing of the input; the teacher waited until the children had begun to do the set work in the text works (following the class discussion on the topic) to interject with this explanation:

T when this one is pulled it can be to able enter into this (hole of) ball but when you heat this ball so that it can increase in its size so that it becomes big it will not be able to enter into this hole or into this ball this shows that soils can expand when heated this was an experiment that was carried out and it was discovered that metal any salts can expand when heat is exposed (into) them so that when this ring fails to enter into that balls then it shows that it has at least increased in ?size that is why it is refusing to enter there are we together?

C Few Yes

(*Properties of Matter, L166/172*)

Although the teacher's explanation may well contain 'key points' (Brown, 1978) it is likely that they will be missed altogether by the pupils. It is the combination of these factors - the striving for pupil participation through whole class interaction, the linking of teacher feedback to initiation and the level of the teacher's confidence in the concept being taught - which is likely to lead to a lack of clarity in teacher explanations. In all the observed lessons more direct presentation

of the 'content' would have consumed about fifteen minutes, yet using the strategies discussed, the content 'lasted' for the duration of the forty-minute lesson. More succinct teacher explanations would, as Wells suggests, give children greater opportunity to raise questions, and support the scaffolding process (Wells, 1989).

My analysis showed that teachers construct their input from a combination of discourse strategies; for example in giving feedback they may repeat the pupil response, praise it and then move on to explain or further elaborate on it. I was therefore interested to explore if there was any particular pattern in the way in which the teacher combined the observed discourse strategies. I decided to first consider the relationship between teacher Explanation (E) and the Participative Strategies[7]. To achieve this I used the Access 97 database application, see Figure 6.15.

Figure 6.15 The result of the search for E + PS (DC DR DYN DRC). Transcript 2, School A, English.

2	4		Yes			Yes				
16	34		Yes		Yes					
65	148		Yes		Yes					
78	182		Yes	Yes						
81	191		Yes			Yes				
89	213		Yes	Yes						
90	217		Yes		Yes					
91	221		Yes	Yes						
107	264		Yes	Yes						
114	283		Yes		Yes					

However, the data generated did not show a pattern of any significance in relation to the occurrence of a specific Participative Strategy, such as a Direct Repetition (DR), with a teacher Explanation (E). I then considered the occurrence of teacher Explanations against the category of Participative Strategies (PS) as a whole, as well as against the other teacher initiation strategies - Repeated Answer (RA), Instruction (I), Question (Q), see Figure 6.16 below.

Figure 6.16 Teacher use of explanations

ENGLISH

Trans No.	School	Lesson title	M or F	Std	T Total	E		E+PS		RA+E		E+I		E + Q	
1	A	New words	Female	3	163	10	6.1%	5	3.1%	2	1.2%	2	1.2%	4	2.5%
2	A	Plurals	Female	5	151	24	15.9%	10	6.6%	3	2.0%	0	0.0%	9	6.0%
3	A	Drama Festival	Female	6	148	25	16.9%	17	11.5%	5	3.4%	0	0.0%	4	2.7%
10	C	Opposites	Female	3	140	18	12.9%	7	5.0%	4	2.9%	3	2.1%	8	5.7%
13	D	Vocabulary	Female	1	158	10	6.3%	3	1.9%	5	3.2%	2	1.3%	3	1.9%
16	E	Words and pictures	Female	1	334	12	3.6%	4	1.2%	2	0.6%	3	0.9%	5	1.5%
18	F	Journeys	Female	3	118	21	17.8%	16	13.6%	3	2.5%	0	0.0%	2	1.7%
		AVERAGES					11.4%		6.1%		2.3%		0.8%		3.1%

MATHS

Trans No.	School	Lesson title	M or F	Std	T Total	E		E+PS		RA+E		E+I		E + Q	
4	A	Discount Sale Price	Male	7	109	38	34.9%	15	13.8%	21	19.3%	2	1.8%	21	19.3%
7	B	Volume	Female	4	88	33	37.5%	19	21.6%	8	9.1%	2	2.3%	13	14.8%
8	B	Area of Borders	Male	6	96	42	43.8%	19	19.8%	13	13.5%	2	2.1%	18	18.8%
11	C	Geometry	Female	5	33	12	36.4%	8	24.2%	6	18.2%	1	3.0%	3	9.1%
14	D	Money	Male	4	120	26	21.7%	7	5.8%	7	5.8%	1	0.8%	19	15.8%
		AVERAGES					34.8%		17.0%		13.2%		2.0%		15.5%

SCIENCE

Trans No.	School	Lesson title	M or F	Std	T Total	E		E+PS		RA+E		E+I		E + Q	
5	A	Work and Forces	Male	6	135	49	36.3%	36	26.7%	6	4.4%	0	0.0%	8	5.9%
9	B	Land and Its Uses	Male	4	56	20	35.7%	10	17.9%	6	10.7%	0	0.0%	5	8.9%
12	C	Properties of Matter	Male	5	90	25	27.8%	9	10.0%	11	12.2%	1	1.1%	11	12.2%
15	D	Senses	Female	1	37	1	2.7%	0	0.0%	1	2.7%	0	0.0%	0	0.0%
17	E	Germination	Female	2	87	30	34.5%	20	23.0%	2	2.3%	1	1.1%	7	8.0%
20	F	Refraction	Female	6	71	26	36.6%	15	21.1%	4	5.6%	0	0.0%	7	9.9%
		AVERAGES					28.9%		16.4%		6.3%		0.4%		7.5%

As Figure 6.16 shows, in English lessons only 6% of the teacher input involved an Explanation followed by a Participative Strategy. However, this data actually reflected the general low occurrence of teacher explanations in English lessons. In maths and science lessons there was a higher occurrence of an Explanation and a Participative Strategy; on average 16% of teacher input included this combination of strategies, but this average was lowered by one lesson - Senses - where there was no occurrence of the combined strategy at all. Teacher Explanations were also sometimes followed by a question - particularly in maths lessons where 15.5% of the teacher input included an explanation and a question - or to a lesser extent by an Instruction.

However, overall my analysis suggested that the ways in which the strategies were used varied, and that the only conclusive statement which could be made about the structure of teacher discourse in Kenyan classrooms was that it involved a combination of strategies. It also showed that whether each of these strategies was used alone, or in

combination, teacher feedback always linked to a teacher initiation. Teacher input therefore fulfilled several roles and this contributed to the inequity of the turn-taking process, teacher inputs being much longer than those of pupils.

Classroom organisation

My analysis of the Stage 2 research suggests that the whole class, teacher-led pattern of classroom interaction did not provide opportunities for children's cognitive or linguistic development. Yet whole-class teaching is the standard practice adopted in Kenyan schools and no variation of this pattern was seen in the twenty-seven lessons observed in Stage 1 and Stage 2 of this study. As discussed in Chapter 2, adopting different teaching approaches, such as the use of group work, can develop ownership of the task at hand; through collaborative talk the pupils will not only complete tasks successfully, but they will also become empowered in the process (Wells, 1989). If the teacher organises the children to work in groups, they are also providing themselves with more opportunity to interact with their pupils and, in so doing, can help them to acquire a procedure, knowledge or a skill that will be useful in other situations (ibid 1989).

The issue of how teachers organised their class for learning was explored in the questionnaire through a number of questions, these related to pupil-pupil talk, opportunities for collaborative work and teacher attitude. There were, however, some contradictions in responses to these issues in the questionnaire; for example although approximately 80% of the questionnaire sample disagreed that teachers should do most of the classroom talking, 62% of the teachers said that the main focus of pupil talk in their lessons was in response to a teacher question. This was further endorsed by around 60% of the teachers who described children as talking 'very little' or 'not too much' to each other about their work (Q4), and 31% of the respondents describing pupils as talking to each other only 'sometimes'. Even when asked more explicitly about the opportunities which children had to work together (Q8), just over 55% of

teachers said group work only occurred sometimes and 32 % said that it did not occur very often.

However, when group work was addressed more explicitly in the interview teachers would say that it occurred regularly in their lessons, although there was little elaboration of how and when group work took place, and the few examples which were given did not appear conducive to collaborative learning. For example, one teacher talked of using group work for revision papers, and explained that,

> 'you give them a paper you tell them it is a revision paper so they can work in groups and use the books to look for the answers .....'
> *(Photography, L55/58)*

Another stressed the importance of identifying a group leader to 'supervise' the rest of the group (Transcript 19, interview only); the nomination of one child as a supervisor appeared more of a teacher substitution than a means of supporting a collaborative learning process. Lack of opportunities for group work was possibly a reflection of the teachers' attitude towards pupil talk and this issue was also explored in the questionnaire - see Figure 6.17 below.

Figure 6.17 Questionnaire – Q6: Teacher attitude to pupils' talk

6	When pupils talk to each other when they are working do you feel....		
		Total responses to question	356
		No. responses	%
a.	angry	7	1.97
b.	that it is becoming undisciplined	34	9.55
c.	that they are not concentrating	174	48.88
d.	pleased	83	23.31
e.	a bit unsure	28	7.87
f.	not in control	30	8.43

As Figure shows, 77% of the teachers expressed some level of consternation at the idea of children talking to each other; seeing it either as an indication of poor concentration or as a sign of indiscipline. Alternatively 23% of the teachers said they 'would be pleased' if pupil interaction occurred. Additional comments were provided by 13% of the

respondents, these indicated that their attitude towards pupil talk would depend upon the situation, that is the age of the pupils and the purpose of the lesson. Although whole-class interaction in younger classes did appear to take up a greater proportion of the lesson, this actually led to even less opportunity for pupil-to-pupil interaction. My analysis of the observation suggested that pupils had no real opportunity to talk to each other whatever their age or the focus of the lesson. Even when pupils were working from their textbooks or the chalkboard, the expectation of both the teachers and children was that this work was to be carried out by individual pupils and in silence.

Teachers' perceptions of the value of group work were explored in the questionnaire by asking teachers to identify what they felt were its main advantages and disadvantages[8]. In relation to the main disadvantages of group work, 50% of the sample felt that it prevented the evaluation of individual pupil performance and a further 33% of teachers felt that group work led to pupils copying from each other. This concern of teachers that collaborative work hindered the evaluation of individual pupil performance implied that they felt that a whole-class approach was more conducive to ongoing pupil evaluation, i.e. formative assessment. In practice, however, an over-reliance on choral responses, participative strategies and selection of respondents from those with their hands raised, meant that individual pupil assessment was likely to be equally, if not more, difficult in a whole class environment.

Approximately 59% of the questionnaire sample saw the main advantage of group work as being that it could help pupils to learn from each other; a further 14% specified that the clever pupils could help the less clever. Research discussed in Chapter 2 endorses the value of group work in supporting pupils' cognitive, linguistic and social skills and leading to their higher achievement (Galton and Williamson, 1994). As Wells (1985) describes, group work can provide children with the opportunity to make sense of their learning, to ask questions and to work together in achieving solutions. Although 73% of the questionnaire sample did acknowledge that group work could support children's learning, they did

not provide any opportunities for it to occur in their own classrooms. As mentioned in Footnote 8, the questionnaire did not support any consideration of the relative weight given by the teachers to the advantages and disadvantages of group work. However, the non-occurrence of group work in the observed classrooms suggests that teachers felt that the disadvantages of group work, mainly in relation to assessment of individual pupils, outweighed the advantages. In addition teachers' consternation when asked about their attitude to pupil-pupil talk in the classroom (Figure 6.17) suggests that any ideas of group work as good practice might conflict with personal` and cultural reactions to pupil talk.

Issues in the differentiation of children's learning were also considered in relation to the setting of different learning tasks and the nature of support given during the lesson time. Just over 81% of the questionnaire sample felt that children should not always be working on the same tasks. This response was contrary to my own experience where in all lessons observed, in both stages of this study, pupils in a class always worked on the same tasks. In the interviews, several teachers described how they organised the class seating so that they could assist the 'slower' children (New Words, L80). They also talked of supporting individual children by marking their work during lesson time (Money, L83; Land and its Uses, L41/42; Refraction, L60). As one teacher explained, this strategy enabled her to identify those who were having difficulties, so that she could 'point out' the mistake (Photography, L11-13). However, in the observed lessons the marking of work in class appeared a perfunctory process. Teachers would mark in silence; neither questioning the child about their response, nor taking the opportunity to provide any additional explanation or input. One of the teachers talked of how the strategy of marking in class time was not always successful:

> 'because some of them correct and they correct wrongly
> so I will have to make them correct it well'
> (*ibid, L64/65*)

Several teachers raised the difficulties in supporting individual learners during lesson time, because of the 'work load' and 'overloaded curriculum (Discount and Sale Price, L 51/53, Drama Festival, L46/48). Alternatively, support to individual learners was often given out of school hours in 'remedial' classes; as discussed in Chapter 2, the regular occurrence of this practice was noted in the 1999 Kenyan National Primary Baseline Survey. Despite Ministry directives, remedial classes continue to be a 'normal' extension to the school day - often lengthening it to twelve hours. However, it is not just the timing of this additional support which is an issue, but also its nature. The focus of remedial sessions is likely to be a repetition of a lesson, rather than an opportunity for the teacher to give individual support to the pupils and to try out different approaches to assist their understanding. As one maths teacher explained, he used remedial classes to give pupils more examples to do which:

> 'are just the same as those they got wrong'
> *(Transcript 19, Interview only, L89/90)*

Another teacher described how sometimes the whole lesson could be repeated (Volume, L31/33). 'More of the same', appeared to be the strategy adopted for the more able children as well as those with difficulties (Discount and Price, L62; Opposites, L58/62). If teachers feel they are constrained, by time or by the model of teaching and learning, to work with pupils on an individual basis, then additional support beyond school hours could play an important part in developing understanding. However, the practices which are adopted in the remedial classes do not provide the necessary opportunities to support the needs of individual learners.

Learning through a second language

The way in which teachers organise for learning can also affect the children's opportunities to experiment with language. For example, the less threatening environment of a small group can actively contribute to their language development (Rulon and McCreary, 1986). Such

opportunities are particularly important in a second language environment and, as discussed in Chapter 2, Lyle (1993) described how group work can also help to raise children's self-esteem, and motivate them to learn. A recent United Nations Educational Scientific Cultural Organisation (UNESCO) Report cited language as a crucial determinant of the poor quality of learning in most African countries (The Daily Nation Newspaper, June 2001). It concluded that the amount of learning which actually occurs is low, especially in Maths and science - with only four countries out of eleven reaching anticipated targets (2001).

Although the language policy in Kenyan primary schools is not the focus of the discussion in this study, its influence on classroom discourse practices and the implication for children's learning is a key consideration. Major (1994) talked of the importance of teachers understanding some of the similarities and differences of learning a first and second language. As discussed in Chapter 2, she describes one of the main distinctions between learning a first and second language is that the child learning a first language is surrounded by linguistic input in that language (Major, 1994). Whereas, exposure to the second or third language of English, particularly in the socially and economically deprived environments of many areas of Kenya, will be limited. There is unlikely to be any adult support for children in learning English and also little opportunity to experience the language through other mediums, such as television or radio. Several teachers talked of the difficulties caused by the social and economic context of the school (Discount and Sale Price L11, Germination, L24/25, Journeys, L91/92). As one teacher explained:

> once they go home they don't talk English they that is
> not their language of communication'
> (*Discount and Sale price, line 111, Germination,*
> *L24/25, Journeys, L91/92)*

Despite the particular problems which children face in learning through a second language in Kenya, the teachers themselves have little grounding in the area of language development. This leads to what appears to be an

abdication of responsibility for children's learning of English; interviewed teachers talked despondently about the issues of teaching through a second language. For example, one teacher of maths described how:

> 'even the bright ones you can see the bright ones can do it on the board alone but they cannot explain'
> (*Discount and Sale Price, L 133/34*)

A teacher of science also talked of the problem which arose as the pupils '*cannot write*' and that *'they lack what you call reading and understanding*' (Properties of Matter, L55/50). Teaching through English was seen by the interviewed teachers to detract from their teaching of the subject; as one science teacher explained, her colleagues:

> '...want to teach science but at the same time because of the children they have to be helping them with English
> (*Germination, L101*)

Some felt that the responsibility for developing pupils' English rested with teachers of younger classes, as one teacher explained:

> '..you find that in the lower primary, teachers most of the time use Mother tongue sometimes and therefore when they come to Standard 4 .these children some of them even ah when they do not understand they will just say yes..'
> (*Land and its Uses, L92/95*)

Similarly, teachers of maths and science felt the responsibility lay with the English teachers, who should:

> 'be encouraging them to talk in that language'
> (*Discount and Sale Price, L120/121*)

Surprisingly, as mentioned earlier, the English teachers also made similar comments about the difficulties of teaching English; one described how the children could not understand what she was teaching *(New Words, L135)* and another talked of how children:

'can't express themselves mm although some try so we have that problem'

An English teacher bemoaned the fact that if children knew *'how to speak it'* it would *'make it easier for me to teach' (Plurals, L35).* It was felt that pupils should be encouraged to speak English, to make it easier for the teachers, but as one teacher recommended, this encouragement should occur *'out of class..' (Plurals, L48).* Another teacher proposed that children 'be made' to speak English from the lower school onwards, and also when they were playing with their friends (*Drama Festival, L102/103*). Several teachers endorsed this sentiment of children being 'made to speak English' (*Plurals, L39*). If children did not comply, it was suggested by one of the interviewed teachers that they should be punished because it was difficult *'unless you force them' or 'punish them' (Photography, L91/100).*

One of the issues discussed in the UNESCO report, cited earlier, is that most teachers in developing countries do not appreciate the importance of Mother Tongue as a pre-condition for school success (The Daily Nation Newspaper, 2001). This was endorsed in this study with teachers talking of *'...Mother tongue interference'* (*New words, L37*) and describing the *'inborn'* difficulties children have with English pronunciation (*Drama Festival, L93*). Similarly, the questionnaire respondents expressed strong views against the use of Mother Tongue in school; over 65% of the sample said they would not encourage the use of Mother Tongue when children were working together and 27% said they would only encourage it sometimes. Only 5% said they would actually encourage children to talk to each other in their Mother Tongue. Even the Kenyan language policy, whereby children should be taught in their Mother tongue from Standards 1-3, is not always adhered to. One observed and interviewed teacher felt that her school's policy of teaching in English from nursery onwards led to the pupils having 'no problem speaking English' by Standard 1 (*New Words, L109/112*). However, my observation of the lesson showed that despite the teacher's confidence in the children's level of English, 93% of their responses were one-word and

over half of all responses elicited were Choral, of which 30% were Choral Few. Similarly, 50% of the teacher initiation was through a Participative Strategy and the questions which were asked were more often Factual Narrow. This data does suggest that either the children were not as confident in English as the teacher believed, or that if the children did have a good understanding of English this was not being built upon by the classroom discourse practices.

In Kenya the issue of learning through another language is further complicated by the existence of an official language, Kiswahili, which is the Mother Tongue of only a minority of the population. Teachers appeared to be less reluctant to code-switch from English to Kiswahili if it was necessary, as one teacher explained '*if they are not understanding I have to switch over to Kiswahili, so that they can be able to follow* ... '(Land and its Uses, L53). Another teacher told me: *No we don't use Mother Tongue we use English and Kiswahili*...(Plurals L126). However, there was still the feeling amongst some of the teachers that the use of Kiswahili represented a failure on their part; one teacher said he only used Kiswahili if he had *'really failed to achieve my objective'* (*Properties of Matter, L83*). Another described how she used it only when she was '*forced to*', (Words and Pictures, L6), but another explained '*you try to avoid it where possible'* (New Words, L131). Others teachers were adamant that they never used any language other than English in their teaching:

> T I don't use Kiswhaili unless it is a Kiswahili lesson'
>
> (*Maths, Transcript 19, Interview only, Line 110*)

In the observed lessons no code-switching occurred between Mother Tongue and English and there was little between Kiswahili and English. In the two lessons when Kiswahili was used, it was to praise the children and initiate a class clap, rather than to explain a concept or the meaning of a word (Land and its Use, Journeys). In this way the teachers were not supporting second language development through 'negotiation with the

child learner', but were as Bruner described, 'showering' the children with spoken language (Bruner, 1994).

Teachers' limited understanding of their role in supporting children's English language development led them to rely on methods which they themselves had experienced at school and at teacher training college. This is reflected in whole-class teaching approaches and the adoption of participative discourse strategies, such as repetition and sentence completion. Teachers also attempted to simplify what they said and this use of 'simple' English was endorsed by a number of the interviewed teachers *(Discount and Price, L118/12; Refraction, L42; Discount and Sale price, L118; Area of Borders, L92; Work and Forces, L59/63).* However, my analysis of the teacher discourse indicates that there is little differentiation between the simplicity of the language used and that of the concepts being taught. As one maths teacher commented:

> 'you have to go to a level whereby maybe if they are in Standard 6 class you can start by asking a question as if Its from Std. 5 level ....'
> *(Area of Borders, Line 90/91)*

It is this emphasis on simplicity which, as discussed earlier, contributes to the often confusing nature of teacher explanations, where input is repeated and interspersed with pseudo questions and participative strategies.

Difficulties caused by teaching through English can be further exacerbated by teachers' own lack of confidence in the subject knowledge and, as the interviews and observations suggest, their ability to communicate in the language. This, combined with their intent to maintain class control throughout means that few risks are taken, either in the whole class discourse or by experimenting with group work.

In this Chapter I have presented a triangulation of my research findings, in which analysis of the classroom observation was considered central. I have shown that the discourse strategies employed by the teachers and the way in which they organise for learning, do not support children's

cognitive or linguistic development. I have also discussed the reluctance of teachers to take responsibility for the teaching of English - this fails to acknowledge that it must be the role of all teachers to develop language. In the next, and final chapter, I summarise my findings and discuss their implication for teachers' professional development.

Chapter 7 Conclusion

Overview of research findings

In this study I have explored the nature of discourse in Kenyan classrooms and the context in which it takes place. In the previous chapter I presented a triangulation of my findings, and in this chapter I move on to summarise those findings and to consider their implication for children's learning. I also review the research approach which I adopted and suggest how the research might be taken forward. I then consider the implications of my findings for the professional development of teachers in Kenya and conclude by exploring how this study has contributed to my own thinking and my work in teacher education.

Central to the theoretical framework for this study were the ideas of Vygotsky and his description of the crucial role of language in children's intellectual development. Key to this was his concept of the zone of proximal development and the role of adult support in helping children to achieve what otherwise would not have been possible; a process which Bruner described as scaffolding. Also important to the model of teaching and learning underpinning this study are the ideas of Piaget: his main contribution to educational philosophy was the emphasis he placed on children learning through activity and interaction with their environment (Wells, 1985). My discussion, however, acknowledges Donaldson's (1983) critique of Piaget's work and Vygotsky's (1962) criticism of the limited emphasis which he placed on the role of language in children's cognitive development. Similarly the ideas of constructivists, and the value they place on what the child brings to the learning environment, formed part of my theoretical framework.

Implications of the second language environment for children's learning were also explored, here the ideas of Mayor (1994) and Halliday (1973) were considered. These highlight the importance of learners of a second language being exposed to the different functions of language and having

opportunities to experiment with their use. I discussed the implications of classroom organisation in supporting children's learning; particularly in relation to group work and addressing individual needs. Within this theoretical framework I set out to explore the nature of teaching and learning in Kenyan primary classrooms and to consider the role of classroom discourse in supporting children's learning.

In the observed Kenyan classrooms, teaching and learning was carried out in a whole class, teacher-fronted environment. This involved a pattern of interaction; one described by Sinclair and Coulthard as Initiation-Response-Feedback (1975). My research analysis suggested that although there was the appearance of equity in the turn-taking pattern of pupil and teacher discourse, this was only in relation to the number of turns - belying the actual passivity of the pupils. As a result of the discourse strategies which the teachers practised and the way in which they organised for learning, the level of individual pupil participation was often very low. There was a reliance by teachers on pupil choral response, although this strategy did not necessarily stimulate whole class participation; often only a small proportion of the class contributed. Teachers also encouraged pupil involvement by adopting 'Participative Strategies'; these initiated pupil repetition, completion of a sentence and affirmation of a teacher statement. However, despite the low-level cognitive and linguistic demands which Participative Strategies made on the pupils, they comprised on average of approximately 50% of all teacher inputs in the three subjects.

Another initiation strategy within the whole class pattern of discourse which teachers practiced regularly, was that of asking questions. My analysis suggested that the majority of these questions required pupils to recall facts - in this study these questions were classified as either 'Factual Narrow' or Factual Broad. Factual Narrow questions might require children to spell a word, give an example of a scientific phenomenon, or carry out a simple mathematical calculation. Although Factual Narrow questions, like Participative Strategies, may have ensured some level of pupil response, similarly the level of intellectual or

linguistic demand they made was low. Factual Broad questions, which are likely to elicit longer and more thoughtful pupil responses, occurred much more infrequently. My third categorisation of teacher questions, Thought/Reasoning', presented a greater intellectual challenge to the pupils, requiring them to articulate their thinking, share their ideas and experiment with the English language. However, in my observation, their occurrence was extremely rare; in each subject less than 1% of the teacher questions could be classified as Thought/Reasoning. Furthermore, as described in Chapter 6, even when a teacher asked a more thought provoking question, they were unlikely to take the opportunity to follow up the pupil's response, ask them to clarify their understanding, or try to ascertain the understanding of the other pupils. Alternatively, they were more likely to employ a Participative Strategy, perhaps involving class repetition of the answer; in this way the lesson was moved forward, but opportunities to scaffold pupils' thinking were missed.

Overall teachers rarely commented on pupil responses, or probed them further, but limited their feedback to repetition of a pupil answer, or perhaps to give praise. In this way the purpose of feedback appeared to be to provide a link with the subsequent explanation. Explanations were a dominant teacher feedback strategy, serving to deliver the 'content', particularly in science and maths lessons. However, the clarity of teachers' explanations was often lost through repetition, 'pseudo' questions and the frequent interjection of Participative Strategies; all discursive strategies presumably intended to encourage children's involvement. It was noted that direct delivery of the lesson's content would have consumed only a third of the lesson time, rather than the whole of it. This more explicit teacher input, as Wells (1989) suggests, would leave time for discussion and pupil questions. In Kenyan primary schools more succinct teacher explanations would contribute to greater efficiency in coverage of the overloaded curriculum.

Another issue which I explored was how the teachers addressed the needs of individual learners. One strategy I observed was teachers ostensibly

checking their pupils' understanding by asking - within the whole class discourse format - 'Are you with me?'; yet these Direct Yes or No (DYN) questions only ever elicited an affirmative response. Similarly, although teachers marked their pupils' work during the lesson time – giving them opportunity to ascertain where the child had gone wrong and assist in their understanding; this was in reality a perfunctory process with little, if any, teacher/pupil interaction. There was also no opportunity in the observed lessons for children to support each other by working collaboratively on a problem. Rather, they were constrained by the whole class teacher-led format of lessons, within which pupils carried out any tasks individually. 'Remedial' lessons were a commonplace feature of schools and these, as discussed in Chapters 2 and 6, were intended to support children with difficulties - although as noted these lessons usually involved the whole class. Yet it appeared that teachers did not use the opportunity to work with children on an individual basis, rather the classes involved a repetition of a lesson, following the same teacher-led pattern of discourse.

Despite teachers' perceptions to the contrary the discourse strategies which they adopted differed little between subjects; in the three observed subjects - English, maths and science - there were more similarities than differences in the pattern and nature of classroom discourse. Although the emphasis placed by teachers on Participative Strategies in English lessons perhaps resulted in these being the most limiting of all - in terms of the development of children's intellectual or linguistic capability. Similarly, the majority of questions in all three subjects were Factual Narrow, providing little opportunity for children to experiment with language.

The context of the second language environment remained an important strand throughout this study; my discussion here centred on Mayor's ideas. I described the difficulties which Kenyan teaches felt they faced in teaching through a second language and I also explored the contradiction between some of their ideas and those more generally accepted - such as the importance of a foundation in Mother Tongue and its role in assisting

children's learning. As discussed in Chapter 6, teachers seemed reluctant to acknowledge their role in supporting children's language learning across the curriculum; rather they appeared to abdicate responsibility for the linguistic problems which the pupils faced. Teachers lack of confidence in this area highlighted the importance of their having some understanding of how both a first and second language are acquired (Mayor, 1994).

Through the strategies they adopted, the Kenyan teachers rarely facilitated the transfer of children's understanding into performance or types of practice (Avalos, 1990). Factual questions and Participative Strategies did not encourage what Edwards and Mercer describe as 'principled' thinking, but rather supported 'ritual thinking' (1995). This, as acknowledged in Chapter 2, may well have a place in teaching and learning, but ritual thinking will not lead to an in-depth understanding of how and why things work (Edwards and Mercer, 1995). It should not, therefore, be the dominant practice; children should instead be encouraged to hypothesise, to explain, to analyse and to evaluate – all of which reflect principled thinking.

If, by the strategies they adopt, the teachers are attempting to create what Edwards and Mercer (1995) describe as 'joint ownership' of the 'fifteen minutes' of content, it seems improbable that they are succeeding. My own experience highlighted how, despite my knowledge of both English and the subject content, it was not easy to make sense of what was being taught. Although it could be argued that any difficulties which I experienced were culturally influenced, the often low-level of participation of children - combined with the wider picture of poor performance in exams - suggests that the Kenyan children also have difficulty in understanding the lessons. It appeared as if the classroom discourse was more of a collusion between teachers and children to create a semblance of curriculum coverage, knowledge transmission and understanding; although even this was more often a collusion between the teacher and a minority of the pupils.

It is this teacher-led discourse with its constant demand for pupil participation that ensures that teachers maintain control of the learning environment. Pupil participation, through the completion of sentences, the repetition of words and choral affirmation of understanding is likely to actually hinder them from engaging at a conceptual level of thinking. Alternatively, pupils are required to respond to a barrage of less demanding teacher elicitations; a practice which is to the detriment of the children's linguistic and cognitive development. As discussed in Chapter 2, the teachers' strategies to maintain classroom control reflects the hierarchical nature of the education system and the wider cultural environment; this renders the children passive recipients of educational knowledge.

In summary, the classroom discourse approaches and the teachers' organisation of learning do not appear to provide opportunities to scaffold either the children's thinking, or their language development. The model of teaching and learning observed in Kenyan classrooms is contrary to the ideas which underpin this study. Alternatively the classroom discourse practices lead to a perpetuation of a restrictive, often monotonous, model of teaching and learning with little exposure to what Halliday (1973) describes as the different functions of language. Children are leaving school, ill-prepared to contribute to the country's development and its aspiration of industrialisation by 2015 (Senanu, 1995). As Bernstein (1973) says, educational failure is often language failure and the model of teaching and learning observed in the Kenyan classrooms most likely contributes to the high rate of pupil drop-out from primary education; its limitations are also reflected in the low educational attainment of primary school 'graduates'.

In the final section of this chapter I consider the implications of my research findings for teachers' inservice and for my own professional development; the focus of the following section is an evaluation of the research process.

An evaluation of the research process

Although much of the literature which contributed to the development of my research approach was drawn from first world sources, it provided a useful foundation for the development of the three instruments in this study. By adopting a triangulated approach, in which the findings of the classroom observation were considered central, I was able to explore different perspectives on key issues. My research approach also supported the generation of both quantitative and qualitative data. Each research instrument differed slightly in its function and purpose, playing a complimentary role and contributing to fuller understanding of the observed classroom discourse. For example, the classroom observation framework provided an insight into the discourse practices which teachers were using. The questionnaire then served to explore teachers' perceptions of practice and their attitudes; it also supported a cross-reference with the observed practice. Through the third instrument, the interview, I was able to consider the more general issues explored in the other two instruments, alongside specific issues raised in the observed lesson.

The differences in the focus of the research tools sometimes resulted in contradictory data, this in itself was of interest and suggested that assumptions about the influence of one research instrument should not be made. For example, when asked about their initiation of choral responses the interviewed teachers talked openly of their use of this practice - although it is criticised by Kenyan educators; however, the majority of the questionnaire sample said they never elicited choral responses. Similarly, praise was considered a little used practice by the teachers responding to the questionnaire, whereas those interviewed felt they often praised their pupils. These contradictions suggest that no one research approach necessarily elicits what might be considered the 'right' answer. Another strength of the triangulated research approach was the combination of large and smaller samples; the questionnaire sample provided a level of quantitative credibility to the discussion of teachers' practice and attitudes.

However, the parallel development of the research instruments and their administration in this study, although a strength of the research process, also presented problems. Issues which were raised through the analysis of one instrument could not then be explored through another. For example, it was not feasible to modify and administer the questionnaire after analysis of the classroom observation; in order to relate it even more specifically to the observed discourse practices. Whether this would have led to any more meaningful data than that which was generated is, however, doubtful. The way in which the research evolved also meant it was not easy to capture the process when 'writing up' the study; specific chapters could not be neatly devoted to each element. This is reflected in the discussion of the classroom observation process - which was central to the study - with its development being the most time consuming. Although the process of its development was lengthy, the observation framework did provide for meaningful analysis of the Kenyan classroom discourse. One reservation, however, is whether the size of the sample (18 lessons and 19 interviews) was too large, as it generated an overwhelming amount of data. In relation to the questionnaire design, in hindsight some questions appeared irrelevant; for example asking teachers about their reaction to incorrect pupil responses - as the discourse strategies they used ensured that pupils rarely gave an incorrect response.

Another challenge in writing up the study was the interlinked relationship between the research in Stage 1 and Stage 2; this meant that there was no real cut-off between the two stages and deciding how to delineate the findings for the reader not easy. Further possible research questions were also raised - as is the consequence of much research; for example whether teachers' perceptions and practice varied according to their gender, the location and type of school, or the age of pupil. Similarly, another possible research focus to pursue might be the relative cognitive and linguistic demands of the three subjects - maths, science and English. However, the intention of this study was to enhance understanding of the discourse practices used by the Kenyan teachers and to consider their implications for children's learning and ultimately the design and

development of inservice courses. Further questions which the study might raise could, I feel, be more appropriately explored by the teachers themselves through an action research model of inservice training; or in 'content' of the inservice programme. The value of my research findings is the contribution they make to the existing body of knowledge in relation to classroom discourse in developing countries and in so doing inform practice. A discussion of the implications of my findings for the design and development of inservice courses follows.

Implications for inservice

In conclusion there is no doubt that Kenyan teachers, like their colleagues in other African countries, have to work within an environment of genuine constraints, caused by poverty. Schools do lack electricity, resources and other facilities, as do the homes of the teachers, support staff and children. It would be unrealistic to think that Kenyan schools can provide a comparable level of education to that of their western counterparts, although this does not mean that the highest standards should not be aspired to. It will be more feasible, within the constrained Kenyan context, for schools to strive for greater success in achieving their own national educational aims; these are reflected in key government documents such as the Education Master Plan and the National Development Plans, and in the curriculum of both the Teacher Training Colleges and schools.

In Chapter 2, the limitations of Kenyan pre-service teacher training – which undoubtedly needs a radical overhaul – were considered; the Ministry of Education are presently considering how this can be achieved. However, with the weaknesses of the pre-service training the role of inservice in effecting change is even more key. What my research suggests is that the current classroom discourse practices do not support pupils' cognitive or linguistic learning. Although training colleges might advocate child centred approaches, these are unlikely to be practiced, or little understood. Therefore, once in the classroom teachers will teach as they were taught themselves - both at school and in the colleges.

Comments, however, made by the teachers in this study, in both the questionnaire and interview, show that they are aware of many of the features of their classroom discourse. They describe children's talk as occurring mainly in response to teacher questions and not often as pupil-pupil interaction. They acknowledge the infrequency of group work in their lessons and even express consternation at the idea of children talking to each other in class. However, it appears that teachers do not realise how much their current practice might actually inhibit children's learning, and that the teacher-pupil pattern of interaction belies the actual passivity of their pupils. The findings of my research, in relation to teachers' perceptions and practice, therefore have implications for their professional development.

Inservice should aim to support teachers in reflecting on their own practice and considering its implications for pupils' learning. It should facilitate, rather than impose, understanding of alternative classroom approaches; in so doing it should provide teachers with opportunities to consider these alternatives in relation to their own teaching and learning context. As Fang (1996) argues, inservice must acknowledge teachers' own ideas and belief systems and it therefore needs to explore the rationale for the discourse practices which are practiced in the Kenyan classrooms. It should try to develop their understanding of the central role of language and the importance of activity in children's learning.

The design and delivery mechanism of inservice training can support this process, and in the first chapter I discussed the weaknesses of the traditional cascade model of implementation. A distance-learning approach can ensure that, through the course materials, the teachers receive a consistent quality of input; teachers can also benefit from tutorials, exchange visits and school-based support. Distance-learning approaches further enable the teacher to study whilst working, this is not only of logistical benefit but can also can enhance the teacher's learning. Teachers will be studying within the context of their own school and in this way can try out and reflect upon different classroom approaches;

they can explore such issues as why they adopt a mode of teaching which, as Rampal (1997) describes, can be oppressively authoritarian.

There are other key considerations which, as discussed in Chapter 2, are likely to affect the impact upon teachers' practice; these are the equity of its access, and the programme's sustainability. Access to inservice is generally low, with the majority of Kenyan teachers having little opportunity to participate at all; in this study only four of the 19 teachers interviewed had any experience of inservice. There is a need, therefore, of increased access through greater co-ordination of inservice provision; there are some moves towards this with establishment of the INSET Unit, based in the Kenyan Ministry of Education.

To ensure that inservice is sustainable the course providers should not attempt to bypass mainstream systems, but instead design courses which build upon and strengthen the existing systems. Experience has shown, for example, that failure to acknowledge other key education stakeholders is likely to result in the failure of the whole programme; within the Kenyan education system the programme design must therefore include the structures at each level - provincial, district, division, zone and school. In working to strengthen the existing systems not only will the capacity of the organisation be built, but so too will that of the individuals; this is particularly crucial in a developing country context. It will also ensure that the Ministry advisory cadres are able to support the professional development of the teachers.

In summary, in a context such as Kenya, a model of inservice which builds on existing systems and structures, and supports teachers' reflection on their own practice, is more likely to have an impact than the more traditional cascaded, 'top-down' approach. It can do much to challenge teachers' perception, whilst acknowledging the daily constraints they face. This study does not, however, conclude by advocating inservice as the panacea to the problems which are faced by Kenya teachers and learners. It acknowledges that the education system will continue to face many constraints. These, as discussed in the first

chapter, are caused by a lack of resources, an exam orientated system, the burden of the cost-sharing policy, the limited number of secondary school places, and the level of social and economic deprivation. The cultural context of Kenya, with its bureaucratic and hierarchical model of learning and the language policy of the education system, will continue to affect the nature of teaching and learning. However, inservice can play a key role in improving the quality of primary school learning. It can provide a sense of professionalism through increasing teachers' understanding of the central role of language and the importance of activity in children's learning. It can also help to create awareness of the classroom discourse practices which teachers employ and the implications for children's cognitive and linguistic learning. Greater access to appropriate models of inservice training will similarly help to acknowledge the importance of teachers in supporting the country's development.

To conclude, the process of undertaking this research and the conclusions which I have drawn, have enhanced my own knowledge and understanding of the nature of classroom discourse and its implications for children's learning. In my role as an Education Adviser - working now for a Department of International Development (DFID) central initiative called Imfundo[9] - I am involved in an ongoing dialogue about the quality of teaching and learning. My work extends now to the countries of Sub-Saharan Africa; exploring the possibilities for ICT enhanced teacher training initiatives. The understanding I have gained of some of the issues affecting the quality of teaching and learning in Kenyan primary classrooms are of significance within the wider African context; where many countries are striving to achieve Universal Primary Education. My research will therefore help me in making an informed contribution to the ongoing professional discourse of the implications for teacher education.

Total words: Chapters 1 through 7 = 49,317

References

1 Adelman C and Walker R (1975) Interaction Analysis in Informal Classrooms: A Critical Comment on the Flanders' System in British Journal of Psychology, Vol 45, 73-76

2 Amidon and Hough (1967) Interaction Analysis as a Feedback System in Interaction Analysis, Ed. Amidon and Hough, Addison and Wesley Publishing Company

3 Andrews H M, Housego I E, Thomas D C (1990) Effective Inservice Programs in Developing Countries: A Study of Expert Opinion in Teachers and Teaching in the Developing World ed. Rust V D, Per Dalin, Garland Publishers Inc.

4 APEID (1987), School-based Inservice Training: A Handbook, UNESCO

5 Ausubel D (1989) in Hayes R C, Primary Teaching Studies Vol 4, No 3, pp196-209

6 Avalos B (1990), Teacher Effectiveness: More Questions about an Old Theme in Teachers and Teaching in the Developing World, Rust V D , Per Dalin, Garland Publishers Inc.

7 Barnes D (1977), From Communication to Curriculum, Penguin

8 Barnes D (1990) Language the Learner and the School: Barnes B and Forbes, 4th edition, Heinneman

9 Ball S J (1993) Self-doubt and soft data: social and technical trajectories I ethnographic fieldwork in Education Research: current issues, Vol 1, Ed. By Hammersley M, The Open University, Paul Chapman Publishing

10 Bell J, (1993), Doing Your Research Project: A Guide for First-Time Researchers in Education and Social Science, Second Edition, Open University Press

11 Bennet N, Desforges C, Wilkinson B (1984) The Quality of Pupil Learning Experiences, LEA Publishers

12 Bernstein B in Halliday M A K (1973) Explorations in the Functions of Language, E Arnold

13 Best J (1994) Troubling Children: Studies of Children and Social Problems, p 3-45, Aldine De Gruyter, New York

14 Briggs (1997) in Schiffren D (Theory and Method in Discourse Analysis: What content for what unit? In Language and Communication, Vol. 17, No. 2, p75 – 92

15 Britton J (1987) Vygotsky's contribution to pedagogical theory in English in Education, Vol 21, 3 pp 97 –102

16 Brock-Utne B (2001), The most recent developments concerning the debate on language in instruction in Tanzania, a paper presented to the 6th Oxford International conference on Education and Development, 19-21 September, 2001: Knowledge, Values and Policy

17 Brown G (1978) Lecturing and Explaining, Methuen and Co. Ltd

18 Bruner J S (1960) The Process of Education, Harvard University Press: Cambridge, Mass

19 Bruner J (1994) From communicating to talking in Stierer B and Maybin J, Language Literacy and Learning in Educational Practice, OU Press

20 Bunyi G (1997) Mulitilingualism and Discourse in Primary School Mathematics in Kenya in Language, Culture and Curriculum Vol 10, No 1 p 52-65

21 Coates J (1993) No gaps, Lots of Overlap; Turn taking in the Talk of Women Friends in Researching Language and Literacy in Social Context, ed by Graddol D, Maybin J and Stierer B, Multilingual Matters, OU Press

22 Cohen L and Manion L (1995) Research Methods in Education, Fourth Edition, Routledge

23 Coles M J (1995) A 'community of enquiry' in Critical Thinking, Talk and a community of enquiry in the primary school in Language and Education, Vol 9, No 3, p161-177

24 Colclough C (1997) Evaulation Report 5.95: Aid to Basic Educaiton in Africa - Opportunities and Constraints, Institute of Development Studies, University of Sussex

25 Crossley M Smith P and Bray M (1985) Inset: Prospects and Principles in Developing Countries, in Journal of Education for Teaching, vol 11, No 2 pp 120-131

26 Dasen P R (1972) Cross Cultural Piagetian Research: A sumamry in Berry J W and Dasen P R, Culture and Cognition Readings in Cross Cultural Psychology, Methuen and Co. Ltd, London.

27 Davies L (1990/92) Report for SPRED 2 Project

28 Delamont S (1976) Beyond Flanders' fields: The relationship of subject matter and individuality to classroom style in Explorations in Classroom Observation, Ed. By M Stubbs and S Delamont

29 Delamont S and Hamilton D (1975) Revisiting classroom research: a continuing cautionary tale in Research in Education, Vol. 11, 1 – 15

30 Denscombe M (1982) The Hidden Pedagogy and its Implications for Teacher Training in the British Journal of Sociology of Education, Vol 3, No 3, 1982, p249-265

31 Denzin (1995) in Hitchcock G and Hughes D (1995) Research and the Teacher: A Qualitative introduction to school-based research, Routledge

32 DES (1967) Children and their primary schools (Plowden Report)

33 Dillon J T (1978) Using Questions to depress student thought in School Review November, p50-63

34 Donaldson M (1983) Children's Minds, Fontana Press, London

35 Driver R (1986), Pupils Alternative Framework in Science in Science in Schools, ed. Brown J et al, Open Unversity Press, Milton Keynes

36 Dunkerton J (1981) Should Classroom Observation be Quantitative in Educational Research Vol 23, Number 2, February 1981, p144-151

37 Edwards A D 'Patterns of Power and Authority' in Classroom Talk in Teaching Strategies, Ed. by Woods Date and publisher to be checked)

38 Edwards A D and Furlong V A (1977) Language in Classroom Interaction in Educational Research, Vol 19,. No 2 , p122-129

39 Edwards D (1990) Classroom Discourse and Classroom Knowledge in the Social Psychology of the Primary School, ed. By Rogers C and Kutnick P, Routledge

40 Edwards D and Mercer N (1995) Common Knowledge: The Development of Understanding in the Classroom, Routledge

41 Edwards T (1992) Teacher Talk and Pupil Competences in Thinking Voices: The Work of the National Oracy Project ed. By Norman K, NCC, Hodder and Stoughton

42 Ely M, Anziel M, Fiedman T and Steinmetz A (1995) Doing Qualitative Research: Circles Within Circles, The Falmer Press Teachers' Library

43 Fairclough N (1989) Language and Power, Longman

44 Fang, Z, A review of research on teacher beliefs and practices in Educational Research, Vol 38, No. 1, Spring 1996, p47-65

45 Flanders N A (1967) The Problems of Observer Training and Reliability in Interaction Analysis, Ed. Amidon-Hough, Addison Wesley Publishing Co.

46 Flanders N A (1976) Research on teaching and improving teacher education in British Journal of Teacher Education, Vol 2, No 2, p167-174

47 Flanders N and Amidon (1967) Interaction Analysis as a Feedback System in Interaction Analysis, Ed. Amidon and Hough, Addison and Wesley Publishing Company

48 French P and Maclure M (1979) Getting the right answer and getting the answer right in Research in Education, No 22 November 1979, p1-24

49 Galton M and Delamont S (1985) Speaking with Forked Tongue? Two Styles of Observation in the ORACLE Project in Field Methods in the Study of Education, Ed. Robert G Burgess, Lewes, Falmer Press

50 Galton M and Williamson J (1994) Group Work in the Primary Classroom, London Routledge

51 Geekie P and Raban B (1993) Learning to Read and Write through Classroom Talk, Warwick Papers on Education Policy No. 2, Trentham Books

52 Giroux H (1980, Teacher Education and the Ideology of Social Control in Journal of Education, 162, p5-27

53 Goodman and Goodman in Moll L C, (1993); Vygotsky and Education: Instructional Implications and Applications of Socio-Historical Psychology, Cambridge University Press

54 Greenland J, (1983), The Inservice Training of Primary School Teachers in English speaking Africa, MacMillan, London

55 Guba E G and Lincoln YS (1993) in Schofield J W (1993) Increasing the generalisability of qualitative in Educational Research: current issues, Volume One, (ed) M Hammersley, The Open University

56 Guthrie G (1990) in Rust V D and Per Dalin Teachers and Teaching in the Developing World, Garland Publishers Inc

57 Halliday M A K (1973) Explorations in the Functions of Language, E Arnold

58 Hammersley in Weigef and Mercer N Methods in Research on Collaborative Learning in Language and Education, Vol 11, No 4

59 Hammersley M (1993) An Appraisal of "Labouring to Learn" in Educational Research, ed. By Gomm R, Woods P, Volume 2: The Open University, Paul Chapman Publishing

60 Hardman F (l999) Draft Consultancy Report for the SPRED project

61 Hargie O D W (1978), The importance of teacher questions in the classroom in Educational Research Volume 20 Number 2, p97-102

62 Hargreaves D (1984) Teachers' questions: open, closed and half-open in Educational Research Volume 26, No 1., February, p46-51

63 Hass Dyson A (1994) The value of 'Time Off Task': Young children's spontaneous talk and deliberate test in Stierer B and Maybin J, Language, Literacy and Learning in Educational Practice, OU Press

64 Hawes H, (1990) in a tutorial, Institute of Education, University of London Curriculum Development Course

65 Heneveld W and Craig H (1996) Schools Count: World Bank Project Designs and the Quality of Primary Education in Sub-Saharan Africa, The World Bank

66 Hitchcock G and Hughes D (1995) Research and the Teacher: A Qualitative introduction to school-based research, Routledge

67 Hollingworth S (1989) Prior Beliefs and cognitive change in learning to teach in American Educational Research Journal, Summer 1989, Vol 26, No 2 pp 160 – 189

68 Hymes D (1972) Functions of Language in the Classroom Anthropology and Education Series, Teachers' College Columbia University

69 Jones M, (1997) Trained and untrained secondary teachers in Barbados: is there a difference in classroom performance in Educational Research Vol 39, No 2, p175-183

70 Juma M N and Ngome C K (1998) Classroom Pedagogy, Teacher Morale and Motivation in Primary Schools in Kenya, MoEHRD, Kenya in Primary Schools in Kenya, M EHRD, Kenya

71 Kanja C (2001) In conversation in the Ministry of Education, Nairobi, Kenya

72 Kenya National Development Plan - Government of Kenya 1997 - 2001

73 Lambert, W E (1994) Persistent issues in bilingualism in The Development of Second Language Proficiency, Ed. by Harley B and Allen, Cambridge Applied Linguistics

74 Light, Sheldon and Woodhead (1997), Child Development in Social Context 2: Learning to Think, The Open University, Routledge

75 Lyle S (1993) An investigation into ways in which children talk themselves into meaning in Language and Education Vol 7, No 3, p181-197

76 Lyle S (1996) An Analysis of Collaborative Group work in the primary school and the factors relevant to its success in Language and Education, Vol 10, No 1, p13-31

77 MacLure, M. (1994) Talking in Class: Four Rationales for the Rise of Oracy in the UK in Stierer, B., and Maybin J. Language, Literacy and Learning in Educational Practice, OU Press

78 McNamara D (1981) Teacher Skill: The question of questioning in educational research, Vol 23, Number 2, February, P104-110

79 Mauro E and Pontefract C (1995) 'The Wheels of the Rickshaw go Round and Round, Miss' in Early Years Journal, Volume 16, Autumn

80 Maybin T, Mercer N, Stierer B (1992) "Scaffolding" Learning in the Classroom in Thinking Voices: The Work of the National Oracy Project ed. By Norman K, NCC, Hodder and Stoughton

81 Mayor, Barbara M. (1994) What Does It Mean To Be Bilingual? in Stierer, B., and Maybin J. Language, Literacy and Learning in Educational Practice, OU Press

82 Mercer N (1991) Researching Common Knowledge: Studying the Content and the Context of Educational Discourse, in Walford G (ed), Doing Educational Research, Routledge

83 Mercer N (1991) in Walford G (ed) Doing Educational Research, London and New York Routledge

84 Mercer, N. (1994) Neo-Vygotskian Theory and Classroom Education in Stierer, B., and Maybin J. Language, Literacy and Learning in Educational Practice, OU Press

85 Mercer N (2000) The analysis of talk as data in educational settings, extract from OU module sent by tutor Janet Maybin

86 Mercer N (1995) The Guided Construction of Knowledge in Language Education ed by Blue G M and Mitchel R, British Association of Applied Linguistics with Multilingual Matters

87 Ministry of Education, (1997) 'Draft results of the 1995 Primary School Data Tabulations'

88 Mitchell R and Myles F (1998): Second Language Learning Theories, Oxford University Press and Arnold

89 Moll L C, (1993); Vygotsky and Education: Instructional Implications and Applications of Socio-Historical Psychology, Cambridge University Press

90 National Primary Baseline Survey (NPBS), 1999 Draft, SPRED 2 and Ministry of Education Kenya

91 Nuttall C (1998) in Kingwill P, Transforming Language Education in Southern Africa: A history of the Molteno project 1975-1996, The Motleno Project

92 Ogadhah K and Molteno M, (1998) A Chance in Life: Principles and Practice in Basic Primary Education for Children, Save the Children

93 Oppenheim A N (1996) Questionnaire Design, Interviewing and Attitude Measurement, Pinter

94 Perraton H (2000) Open and Distance Learning in the Developing World, Routledge, Studies in Distance Education, 2000

95 Piaget J (1997), Advances in child and adolescent psychology in Light, Sheldon and Woodhead Child Development in Social Context 2: Learning to Think, The Open University, Routledge

96 Pontefract C (1990)Science for All: Issues in Primary Science Education in the 1990s, an unpublished MA dissertation, Institute of Education, University of London

97 Rampal, in Lynch and Modgi,(1997) Education and Development:Tradition and Innovation, p211-219

98 Rogoff and Gardner (1997) in Light, Sheldon and Woodhead Child Development in Social Context 2: Learning to Think, The Open University, Routledge

99 Rowell P M (1995) Perspectives of Pedagogy in Teacher Education: The case of Namibia in the International Journal of Educational Development, Vol 15, No 1 pp 3-13

100 Rulon K A and McCreary H, (1986) Negotiation of Content: Teacher-Fronted and Small-Group Interaction, in Talking to Learn: Conversation in Second Language Acquisition Series on Issues in Second Language Research Ed. by Day R R

101 Rust V D and Per Dalin (1990), Improving the Quality of Teaching in Teachers and Teaching in the Developing World, Garland Inc. Publishers

102 Sankale J (2001) In conversation in the Ministry of Education, Nairobi, Kenya

103 Scarth J and Hammersley M (1993) Questioning ORACLE: an assessment of ORACLE's analysis of teachers' questions in Educational Research: current issues, Vol 2, Ed. By Gomm R and Woods P, The Open University, Paul Chapman Publishing

104 Schiffren D (1997) Theory and Method in Discourse Analysis: What content for what unit? In Language and Communication, Vol. 17, No. 2, p75 – 92

105 Schofield J W (1993) Increasing the generalisability of qualitative in Educational Research: current issues, Volume One, (ed) M Hammersley, The Open University

106 Senanu, K, 1995, Creative Use of Language in Kenya, Jomo Kenyatta Foundation

107 Silverman D (1997) Interpreting Qualitative Data: Methods for Analysing Talk Text and Interaction , Sage Publications

108 Sinclair M and Coultard R M (1975) Towards an Analysis of Discourse: The English Used by Teachers and Pupils, Open University Press

109 Stenhouse L (1995) The Teacher as Researcher, The Open University E835 'Offprints Reader'

110 Stierer B and Maybin J (1994) Language, Literacy and Learning in Educational Practice, Multilingual Matters, The Open University

111 Swann J (1994) in Graddol D, Maybin J and Stierer B Researching Language and Literacy in Social Context Multilingual Matters, The Open University

112 Tharp R and Gallimore R (1997) A theory of teaching as assisted performance in Light, Sheldon and Woodhead (1997), Child Development in Social Context 2: Learning to Think, The Open University, Routledge

113 Tudge J (1993) Vygotsky, the zone of proximal development, and peer collaboration: Implications for classroom practice in Moll L C, Vygotsky and Education: Instructional Implications and Applications of Socio-Historical Psychology, Cambridge University Press

114 The Daily Nation Newspaper, Kenya, January 2000

115 The Daily Nation Newspaper, Kenya 18th December, 2000, New direction in school enrolment in Blackboard Supplement

116 The Daily Nation Newspaper, Kenya, March 24th, 2001

117 The Open University Study Guide, (1994), E825 Language and Literacy, MA course reader

118 The Open University, (1994), E621 Professional Development in Action, Methodology Handbook and Study Guide

119 The Open University Study Guide, (1996) E835 'Educational Research in Action', MA in Education

120 The Open University (1998) The Relationship between qualitative and quantitative research – handbook from residential weekend in July 1998

121 Tough J (1977) The Development of Meaning, George Allen

122 United Nations Educational Scientific Cultural Organisation (UNESCO) Report 'With Africa for Africa: Towards Quality Education for all' quoted in East African Standard Newspaper on February 3rd, 2001

123 Walford G (1991) Doing Educational Research, Open University, Routledge

124 Weigerof R and Mercer N (1997) Methods in Research on Collaborative Learning in Language and Education, Vol 11, No 4, p 271-286

125 Wells G (1985) Language Learning and Education, NFER Nelson

126 Wells G, (1987) The Meaning Makers: Children Learning Language and Using Language to Learn, Hodder and Stoughton

127 Wells G, (1989) Language in the Classroom: Literacy and Collaborative Talk in Language and Education, Vol 3, No 4, p251-273

128 Wells G (1995) Language, Learning and the Curriculum, Chapter 9

129 Wood D (1992) Culture, Language and Child Development , in Language and Education Vol 6, No 2,3 & 4 pp123-140

130 Wood D (1992) Teaching Talk in Thinking Voices: The Work of the National Oracy Project ed. By Norman K, NCC, Hodder and Stoughton

131 Wragg, E C (1984) 'Classroom Teaching Skills', Routledge

132 Wragg, E C and Brown G (1993), Explaining, Routledge

133 Vygotsky, L.S. (1962) Thought and Language, MIT Press, Mass.

134 Vygotsky, L S (1993) in Moll L C, Vygotsky and Education: Instructional Implications and Applications of Socio-Historical Psychology, Cambridge University Press

135 Zeichner (2000) in Perraton H, Open and Distance Learning in the Developing World. Studies in Distance Education, Routledge

End notes

[1] Line 80, Interview 1, Stage 1 Report,'E902, PR05 Final Report', 1999. C. Pontefract.

[2] This interview theme was identified during the analysis process of Stage 2.

[3] My reference system in all extracts, from lessons and interviews, gives only the title of the lesson and the transcript line number, this can then be cross referenced with Figure 4.1 on page 65, for further information.

[4] The total number of teachers by gender sometimes differs from the total of the gender sub-groups, in Figure 5.2 one male teacher did not give his years of experience. In 5.3 both male and female teachers sometimes ticked two boxes or none at all.

[5] Differences between mode and median were negligible and are therefore not shown.

[6] In this case there was a difference between median and the average, this reflected one lesson where although only 4 FN questions were asked but out of a the five total this constituted 80%. Similarly with FB questions.

[7] The data was collected by identifying the lines of the transcript in which an Explanation and the individual Participative Strategies occurred – see Figure 6.15.

[8] In analysing the responses to these questions it was not possible to contrast their relative weight, i.e. to ascertain whether the advantages were felt to outweigh the disadvantages, or vice versa.

[9] Imfundo (im-fun-doe) The acquisition of knowledge; the process of becoming educated [from the Nguni languages of Southern Africa].

Appendices

Appendices Contents

Appendix 1a

Hardman's Observation Schedule (Explanatory Notes)

Hardman's Observation Schedule (Explanatory notes)

APPENDIX : OBSERVATION SCHEDULE

Symbol Label:

Teacher Questions

O = Open question	The question calls for explanation by the pupil
C = Closed question	The question calls for a single response

Responder	Definition
M: Male	The pupil answering the question is male
F: Female	The pupil answering the question is female
CR: Choral response	The whole class, or group of students within class, respond together

Student Response

+ Right	The teacher accepts the pupil's response as correct or satisfactory
± Part right	The teacher considers the pupil's to be only partially correct or to be correct but incomplete
- Wrong	The teacher considers the pupil's response to be incorrect
0 no answer	The pupil makes no response or says he doesn't know (code student's answer here if teacher gives feedback reaction before s/he is able to respond
P. Dem	Pupil demonstrates answer to question
P. Quest	Pupil asks curriculum question

Teacher Feedback Reaction

++ Praise	Teacher praises student either in words ("fine", "good", "wonderful", "good thinking') or by expressing verbal affirmation in a notably warm, joyous or excited manner
+ Affirm	Teacher simply affirms that the pupil's response is correct (nods, repeats answer, says "Yes", "OK", etc.)
0 No reaction	Teacher makes no response whatever to pupil's response - s/he goes on to something else
- Negate	Teacher simply indicates that the pupil's response is incorrect (shakes head, says "No", "That's not right", "Hm-mm", etc.)
- - Criticise	Teacher criticises student, either in words ("You should know better than that', "That doesn't make any sense - you better pay close attention' etc.) or by expressing verbal negation in a frustrated, angry or disgusted manner
Gives Ans: Teacher gives answer	Teacher provides the correct answer for the pupil
Ask Other: Teacher asks another pupil	Teacher redirects the question, asking a different pupil to try to answer it
Other Calls: Another pupil calls out answer	Another pupil calls out the correct answer and the teacher achnowledges that it is correct
Rpts: Repeats question	Teacher repeats the original question, either in its entirety or with a prompt ("Well?", "Do you know?", "What's the answer?')
Clue: Rephrase or clue	Teacher makes original question easier for pupil to answer by rephrasing it or by giving a clue

Appendix 1b

Hardman's Teacher Question-Answer-Feedback Response Form (Observation Schedule)

Teacher Question-Answer-Feedback Response Form

	Pupil Response								Teacher Feedback Reaction									
Teach Quest	M	F	+	±	-	0	P. Dem	P. Quest	++	+	0	-	- -	Gives Ans	Ask Other	Other calls	Rpts	Clue

Appendix 2a

Lesson transcripts

English, transcript 10

Maths, transcript 4

Science, transcript 12

T	Yes we are learning opposites we are learning what?
Choral	opposites (.)
T	read this one
Choral	thick
T	again
Choral	thick
T	Yes where is that book okay look at me
Choral	thick
T	again
Choral	thick
T	say that book is thick
Choral	that book is thick
T	again
Choral	that book is thick
T	yes how is this book?
Choral	thick that book is thick
T	again
Choral	that book is thick
T	yes you don't say a what?
Choral	fat
T	a fat book you don't say?
C Few	fat book
T	you say what?
C Few	thick book thick
T	again
Choral	thick book
T	yes a thick book a thick thick book but you don't say a fat what?
Choral	book
T	stand up Joyce and how is Joyce? don't laugh
C Few	*(laughing)* fat
T	again
Choral	fat
T	again
Choral	fat
T	say Joyce is fat
Choral	Joyce is fat
T	again
Choral	Joyce is fat
T	Violet how is Joyce? Look at Joyce tell us (.)
P	Joyce is fat
T	again
Choral	Joyce is fat
T	all of you
Choral	Joyce is fat
T	Josephine stand up *(laughing)* you are smart how is Josephine?
P	Josephine is thin
T	again
Choral	Josephine is thin

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

T	again
Choral	Josephine is thin?
T	yes, Josephine is thin and Joyce is?
Choral	fat
T	very good sit down look at there are two papers this one is what? (.) read this word
Choral	wet
T	again
Choral	wet
T	somebody come and touch (.) this paper how is this paper?
C Few	wet
T	eh?
Choral	wet
T	say that paper is wet
Choral	that paper is wet
T	again
Choral	that paper is wet
T	how is that paper?
P	this paper is wet
T	again
P	this paper is wet
T	yes this paper is wet and how is this paper? yes Nyambura
P	this paper is dry
T	eh?
P	this paper is dry
T	again
Choral	this paper is
T	that
Choral	that paper is dry
T	again
Choral	that paper is dry
T	Yes, this this paper is dry and this paper is?
Choral	wet
	(Long pause)
T	who will make a sentence using the word open yes?
P	open the door
T	again
P	open the door
T	tell someone to open the door
P	Sylvia open the door
T	yes Sylvia open the door (.) say the door is open
Choral	the door is open
T	again
Choral	the door is open
T	what is the opposite of open open yes?
P	( )
T	eh?
P	( )
T	open (.) closed

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

P ( )
T who will close the door yes go and close the door (.) how is the door?
C Few the door is closed
T again
Choral the door is closed
T opposite of open is?
Choral closed
T now (.) I want you to write the opposite of these words you are going to write in your books eh? you are going to write in your?
C Few books
T open your books (.) before you write let us write read them again
Choral thin fat
T again
Choral thin-fat thick-thin wet-dry open-close heavy-light new-old sad-happy good-bad
T write in your books (.) in your English books
(children writing in silence)
T how many have finished writing? (.) okay put your hands down (.) I know you know so many words eh you have learnt so many words eh? now stop writing those who have not finished (.) you will finish later close you books I want someone to give me another word then you will tell me the opposite of that word (.) Njiru, Njiru give us another word yes?
P girl
T and tell us in a sentence give us in a sentence eh?
P that is a girl
T eh
P that is a girl
T that is a girl stand up stand up that is a girl
P John is
T or you say say like this eh what is your name?
P Susan
T Susan Susan is a girl (.) say like that
Choral Susan is a girl
T say the opposite (.) tell us another sentence Austin is a boy
Choral Austin is a boy
T okay like that who will give us another one give us another one
P ( )
T eh
P ( )
T what is the opposite of teacher?
C few that is
T that is a student
T can you point to me and say that is a teacher?
Choral that is a teacher
T and that
Choral that is a student/girl
T again
Choral that is a student
T another one (.) who is ready with another one (.) Wambui is beautiful Wambui is?
Choral beautiful

3 017

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

T yes tell me another one I am imaging we don't have Wambui here another Wambui who is away not here Wambui is beautiful beautiful eh give me another another another opposite of beautiful the opposite of beautiful (.) yes?
P ugly
T ugly Wangeci is?
P ugly
T say Wambui is beautiful
Choral Wambui is beautiful
T Wangeci?
Choral Wangeci is ugly
T okay give me another one give me another one you know so many words (.) eh?
P Brian is strong
T Brian is strong good yes Brian is strong the opposite of you want us to give the opposite of strong
P strong
T you want us to give you the opposite of strong
P Kennedy is weak
T Kennedy is?
Choral weak
T all of you say Brian is strong
Choral Brian is strong
T Kennedy?
Choral Kennedy is weak
T Yes another one give me another word (.) another word we have learnt
P John is good
T John is good (.) the opposite of which opposite of the opposite of?
Choral good
T what is the opposite of good?
P bad
T yes
P bad
T bad who is bad what did you say repeat that sentence
P Daniel is bad
T Daniel is?
Choral bad
T all of you say Daniel is bad
Choral Daniel is bad
T yes and another word here (.) look at this book this two book children read the
C Few new
T eh
Choral new
T this book is
Choral new
T say that book is new
Choral that book is new
T and this
C Few that book is old
T again

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

Choral that book is old
T again
Choral that book is old
T how is it
P that book is old
T yes who will give me another word yes?
P that bag is full
T again
P that bag is full
T that bag is full this one look at this bag *(children laughing)* this bag is this book that bag is?
Choral that bag is full
T again
Choral that bag is full
T what is the opposite of full?
Choral empty
T again
Choral empty
T empty I don't know whether this one is empty (.) empty how is this bag?
Choral empty
T again
Choral that bag is empty
T again
Choral that bag is empty
T that means it has nothing yes who will give us another word?
P ( )
T another word we have learnt
P Rose is young
T Rose is?
Choral young
T again
Choral Rose is young
T very good yes Rose is?
Choral young
T and who is old here in this room who is old?
P Wairimu is old
T who is Wairimu?
Choral the teacher is old
T again
P the teacher is old
T yes Rose is young and I am old I am?
Choral old
T another one
P Danielle is rich
T again
P Danielle is rich
T Danielle is rich that means she has what?
Choral money
T she has money yes what is the opposite of rich?

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

Choral	poor
T	who is poor? Danielle is rich and eh
P	( )
T	we are talking about rich what is the opposite of rich?
Choral	poor
T	yes who is who is who is poor?
P	Charles is poor
T	Charles is not poor (.) there is another one who is poor who is not here we are this class we are rich
P	Jane is poor
T	Jane yes Jane is?
Choral	poor
T	Jane is poor a poor person has no dress and no poor people do not even come to school because they do not have what?
Choral	money
T	to pay for their school fees Gitare you are rich your Daddy is rich you have clothes you have books you are here in the classroom those people who are rich poor ah like those you see the parking boys these who beg eh they ask people to give them what?
C Few	money
T	and food but not us here we are what?
Choral	rich
T	here we have we have got everything ( )
P	Geoffrey is tall
T	Geoffrey is tall who is Geoffrey?
T	stand up what is the opposite of tall?
Choral	short
T	eh?
Choral	short
T	( )
P	Daniel is short
T	Daniel stand up we see you Daniel is?
Choral	short
T	again
Choral	David is short David is short
P	Cynthia is obeying the teacher
T	Cynthia is obeying the teacher all of you
Choral	Cynthia is obeying the teacher
T	eh Margaret
P	Joyce is disobeying the teacher
T	all of you
Choral	Joyce is disobeying the teacher
T	disobeying disobeying she is not doing what?
Choral	obeying
T	she is not doing the right thing eh?
Choral	yes
T	the teacher is telling her to do this and she is doing a different thing now those how many have finished writing that? okay those who have not finished finish and those who have finished write some more of your own you are going to write in sentences write in?

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

Choral sentences
T like this you are going to write Denis in short you are going to write like this Denis is short (.) eh
John ( ) John yes
Choral tall
T John is tall (.) the bell has rung that one you will do even when you go home you will do that you will make sentences.

(Children putting their books away)

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

T	So, Good morning
Choral	good morning Mr Muchoki
T	how are you?
Choral	fine thank you Mr Muchoki
T	sit down
Choral	thank you Mr Muchoki
T	so are you ready for maths today?
Choral	yes
T	So can someone remind (me) what we discussed in our previous lessons
P	(yes)
T	whatever topic we discussed it was on what?
P	yes
T	it was on what?
P	per
T	ah
P	percentage
T	it was on percentage which percentage?
Choral	discount
T	percentage discount working out what we call the percentage discount (.) so (.) which formula do we use to find the discount? (.) which formula do we use to find the discount? yes William
P	( )
T	speak up they want to hear you ( )
P	( )
T	ah
P	( )
T	multiplying the on the?
Choral	same price
T	multiplying the (.) on the same so multiply the ( ) so what is the multiplying who will tell us what is the multiply? what is the multiplying? yah
P	(the price of an item)
T	the price of the item you have so maybe if you are on a you are doing a window shopping in a shop that price that is written there on the item is what we call? the market price (.) maybe the price may eh one hundred shillings (.) the retail price of that item is one hundred? shillings and then you bargain with the? shopkeeper and he reduces the price to what? to by twenty shillings so you will pay how much?
C few	eighty
T	eh
C few	eighty shillings
T	and this eighty shillings is what is known as what? what do we call this eighty shillings?
C few	selling price
T	eh
C few	selling price
T	that is what is known as the selling price so what is the discount here?
P	twenty
T	eh
P	twenty shillings
T	the discount is?

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

C few twenty shillings
T so the discount is twenty shillings so how do we work out the percentage discount? how do we work out the percentage discount? yes
P (discount over)
T discount good discount over multiplies multiply by?
Choral one hundred percent
T one hundred? percent multiply by one hundred percent that is correct discount over, multiply multiply by one hundred?
Choral percent
T so here I have got an example (.) multiply multiply the multiplies of a shirt is one hundred and thirty shillings one hundred and thirty shillings (.) this is what we call the multiply the multiply of a shirt is one hundred and thirty shillings and after bargaining (.) after bargaining Shemoli bought it for one twenty shillings he bought it for?
Choral one twenty shillings
T (.) so that is what is known as one twenty shillings is the what do we call it?
Choral selling price
T yah that is selling? price what discount was ( ) attached to the shirt?
P ( )
T eh
P ( )
T yah that is you subtract one ( )?
Choral twenty
T to one thirty to one hundred and twenty and you get the discount of how much?
Choral ten shillings
T ten shillings so what is the percentage discount? what are we going to do to get the percentage discount? (.) and somebody should come here and do it on the board yah, can you do it
(pupil working on the board - silence for about 3 mins)
T correct eh?
P no
T is she correct? eh? ( ) but she is your friend (silence but noisy traffic) so what you do is ten is the discount, is that correct?
C few yes
T one thirty is what is known as what?
Choral multiplies
T the multiplies you multiply by one hundred? (.) percent but not one hundred as she was doing by one hundred? (.) percent remember you are converting this into what is known as? (.) percentage. that is why you are multiplying by one hundred percent so this zero will cancel this and here you multiply ten times ten you get what?
C few one hundred shillings
T one hundred shillings yes over thirteen you get one hundred shillings yah over thirteen so divide it by this one hundred divide by thirteen how many times will thirteen go to one hundred?
C few eight
T eight so (.) eight multiply by thirteen what do you get?
P it cannot it will reject
T it can't which means so how many times?
C few seven

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T seven times so seven multiply by thirteen?
Choral ninety one
T ninety one (.) subtract here you get nine? yah
Choral yes
T and here we put what we call?
P decimal point
T decimal point and what do you put here down eeh?
Choral add zero
T add zero and write you divide by thirteen what do you get?
C few six
T six six multiply by thirteen?
C few seventy eight
T seventy eight subtract again (.) two one add zero one twenty divide by thirteen one hundred and twenty divide by thirteen how many times will thirteen go to one hundred and two?
C few nine times
T nine times because of?
C few one seventeen
T one hundred and seventeen carry eight now since this is (.) you carry decimal you can just leave it there so it is seven shillings and maybe without including without this one and? seventy cents yah?
C few yes
T seven shillings and?
C few seventy cents
T that is (.) no no no (.) this is percentage yah?
C few yes
T so that the other a store allow (.) a store allow (.) a ten percent discount a store allow a ten percent discount on all its items how much will a customer pay for which marked price is six shillings and fifty six thousand and fifty? The multiply is?
Choral six hundred
T six hundred and?
Choral fifty
T six hundred and fifty (.) how much will a customer pay for that table? what are we going to do eh? what is the multiply? what is the multiply?
C few ten percent
T eh?
Choral ten percent
T the multiple
C few six hundred
T six hundred and?
Choral fifty
T haya what is the discount?
Choral ten percent
T eh?
Choral ten percent
T ten percent the discount is ten? percent since the discount is ten percent what is the discount in shilling what is the discount in shilling? you convert this one this discount into shilling yah? What do you do? This is ten percent? of the?

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(.) = short pause, (.) long pause, ( ) unclear

P discount
T this is ten percent of the multi? (.)
Choral multiply
T the multiply so we can say discount equals equals ten percent of multiply so what are we going to do to get the discount now since you know discount is equal to ten percent of the multiply (.) Linda?
P ( )
T very good ten over one hundred times the multiple ten over one hundred times the multiple good ten over one hundred times the multiply the multiply is? the multiply is?
Choral six hundred and fifty
T is it correct?
Choral yes
T so this zero will cancel that and that zero will cancel that one yah?
Choral yes
T so what is the discount now?
Choral sixty five
T so discount equal equals sixty five shillings (.) since the discount is sixty five shillings what is or how much will a customer pay for that table? what is the selling price since the discount is sixty five? what is the selling price? what are you going to do to get the selling price?
P ( )
T six hundred and fifty is the multiple you subtract sixty five which is the?
Choral discount
T six hundred and fifty which is the market price you subtract sixty five which is eh the discount which is ( )?
Choral sixty five
T one you subtract six hundred and fifty subtract six five what do you get?
Choral five hundred and eighty five
T five hundred and? eighty five shillings correct so this is equivalent to what we call?
P eight five
T it is equivalent to? we call what?
Choral selling price
T selling?
Choral price
T that is your selling price (.) so I am going to give you one question I write it on the board and you do it in your exercise book a bill of eight hundred (.) do you have any questions?
C few no
T eh?
Choral no
(Teacher writing on the blackboard and working out- 5 minutes)
T raise up your hands if you have finished (o) so will mark later have you finished? Everybody has finished
Choral no/yes
T eh?
Choral no/yes
T so let's go (through the question) together (.) let's start with the first question (.) ah a bill of eight hundred shillings was reduced to seven fifty shillings how much money was the discount? (what are we going to do?) who will do it on the board on those who have finished the others should pay attention

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(.) = short pause, (.) long pause, ( ) unclear

(Pupil working on the board)

T so correct (.) good the discount is ten shillings so hundred shillings (.) we subtract seven hundred and what?

C few fifty

T we get a discount of? Fifty? shillings because the multiple of that bill is what? hundred shillings subtract seven hundred fifty only which is the sell selling price so the other question what was the discount at as percentage convert that discount into?

C few percentage

T percentage yes

(Pupil working on the board)

T (yes)

P ( )

T ( )

P me teacher

(Pupil working on the board)

T correct so what have you done? can you explain to the class what you have done?

(laughter)

T sit you can sit so the this is fifty (.) over the multiply which is what? eight hundred shillings you multiply by 100 percent I told you you should not forget this (.) this sign here that is percentage you are converting it into? percentage so you multiply by 100 percent and once you divide and mulitply you get six one over four not six one over four percent six one over four percent the other one (.) oh Linda can you tell us what you have done? explain to them they want to know some of you don't know what what is happening

P yes

T yah tell us

P ( )

T eh?

P ( )

T ah sit okay here the ten percent is the discount ten percent is the discount is that correct?

C few yes

T calculate the selling price the selling price if ten percent is given if ten percent discount is given calculate the selling price so the multiply is 206. So ten percent of 206 shillings ten percent of 206 shillings so you will get the ten percent yah? And the ten percent here Peter is what? What is the ten percent of 206?

P ( )

T eh?

P 103

T 103? shillings 103 shillings you subtract what? you subtract what? you subtract the?

Choral multiply

T 103 shillings you subtract the multiply and we (.) get? Is it 103 shillings? the discount is 103?

P no

T it is what?

P twenty shillings

T it is twenty shillings and sixty?

C few cents

T twenty shillings and sixty cents is the discount you subtract two hundred and six shillings and sixty cents and you get one eighty five shillings which is the what? The?

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(.) = short pause, (.) long pause, ( ) unclear

C few	selling price
T	the selling price the selling price is one eighty five shillings so that item was sold at one hundred and eighty five? shillings and? forty?
Choral	cents
T	the other one ah the last one the last is?
	(Pupil working on the board)
T	is she correct?
C few	no
T	yes Prisca
	(Pupil working on the board)
T	is she correct?
Choral	yes
T	so what you do (.) Denis ( ) so what you do is ten percent of? the multiply the multiply is what Denis what is the multiply?
P	( )
T	eh
P	five thousand eight hundred
T	five thousand eight hundred so ten percent of five hundred five thousand eight hundred (.) so you divide this two zeros will cancel those two zeros yah so ten multiply by fifty eight what is it?
C few	five hundred and eighty
T	five hundred and? eighty this is the discount in what?
Choral	in shillings
T	the discount in what?
Choral	shillings
T	now to get the selling price what do you do? Yes
P	( )
T	eh? multiply subtract what?
P	discount
T	the discount multiply subtract the discount and you get the?
C few	selling price
T	so that is what you done multiply this with five thousand eight hundred subtract five hundred and eighty and you get five thousand two hundred and?
Choral	twenty
T	any question?
C few	no
T	eh
Choral	no question
T	so you can do exercise eight five all of them and after finish you can bring your books to the staffroom
P	yes

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

T good morning class
Choral good morning teacher and how are you?
T fine and how are you?
Choral fine thank you teacher
T sit down
Choral thank you teacher
(sitting down)
T yes let's continue from where we reached last time ( ) last time we were looking at the soils I said that we have got three types of soils we have what else?
P sand soil
T sand soil yes?
P clay soil
T clay soil and?
P loam soil
T loam soil and we also looked at what we call how water pass through soil (.) how water pass through soil and I gave you the word which means that water passes through soil which word was it? dr...?
P ( ) drainage
T this is drainage (.) it is how water pass in soil I also talked about how water rise up in soil how water rise up in soil and we did the experiment the rising up of soil of water in soil is called what?
P capillarity
T this is capillarity this is capillarity (.) now today we are going to learn about properties of?
Choral matter
T matter eh for who can tell me what he can see around? tell what you can be able to see around
P trees
T trees
P juice
T juice
P Britania *(biscuit box on side)*
T Britania
T anything that you can see around or you just look anywhere
P desk
T what else?
P desk
T desk yes?
P camera
T the camera yes?
P umbrella
T umbrella it is yes there yes
P window
T window
P chair
T the chair
P cupboard
T the cupboard
P container

1 of 8

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(.) = short pause, (.) long pause, ( ) unclear

T container
P blackboard
T blackboard hands down now hands down now (.) now what you have been mentioning around is what we call matter in science or what you have been mentioning around is what we call?
C matter
T matter now matter exists in three forms I am going to mention the three forms of matter the one special things mentioning like (.) the umbrella (.) containers (.) pieces of wood like this blackboard ruler these ones are put in what we call? solids these ones are solids we have got also another type of matter which exists in a liquid form on this word we are staying on who can tell me anything that can exist in a liquid in a liquid form eh eh?
P gas
T the gas is it a liquid? yes a good trial but not
P ice
T ice ice can be liquid yes you took it during breaktime I know (.) what else?
P water
T water water yes what else yes?
P ( )
T orange?
P oil
T oil yes oil any other?
P paraffin
T paraffin yes does it make up your answer yes?
P Doom *(insect spray)*
T Doom yes
P spirit
T spirit and juice you are forgetting to mentioning it all these ones are what we call? liquids they are liquids (.) there is also another state of matter that you did not mention but we feel that it is there we feel is there that is why we are putting on sweaters which type of this? am talking about oh
P liquids
T liquids very good yes?
P air
T this is air so air is a gas it is a gas who can mention for me any example of a gas (.) stand forward ( )
P carbon dioxide
T carbon dioxide is a gas very good
P oxygen
T oxygen what else?
P nitrogen
T nitrogen is a gas yes what else who can remind me all those ones are what we call gases so we have now known that matter is made up of three things and these ones are either?
C few solid liquid gas
T and gas those are the three states of matter matter can only be formed in these three forms are we together?
C few yes
T now this is a chalkboard duster in which state can we get it this one here?
P solid

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

T this is a solid what about this pen of mine?
P solid
T it is a solid yes what about a piece of paper?
P ( )
T this is liquid?
P no
T what is it?
P a solid
T a solid what about I can see juice here how do we put it? in which form?
P liquid
T this is a liquid very good now (.) we are faring on well (.) so we say that matter behaves in different ways for example the solids liquids and gas behave in different ways for example there is a time when these solids solids can get bigger they can become so big (.) for example when you heat apply heat on these solids for example a metal it will grow big it will grow big (.) now in science we don't say that its growing big there is a term that we use we say it does what? who can remind me yes growing big of metals when for example when they are heated they are doing what? who can attempt?
P they expand
T they expand very good they expand (.) so matter can expand and there is also a time when matter can become small in size for example when they cool down when a metal cools down it reduces in size and shape so in science we don't say that it becomes small and there is just one word that we use how do we say?
P it contracts
T it contracts
P it contracts very good it contra..?
Choral contracts
T contracts so matter can either expand or can either contract this is um look here look this end (.) matter can only expand when they are? heated when you heat a liquid it will have to expand for example if we put water here then (.) in this glass we place on fire you will see that water is boiling and then starts spilling off spills off this one shows that the water which is a liquid was heated and it started expanding that is why there was an? overflow not so?
C few yes
T are we together?
Choral yes
T who has ever prepared that for example you are preparing some porridge then it has reached a half like this after it starts boiling you will see it spilling off the surfaces have you ever tried that?
P yes
T then that one shows that a liquid expands when it is? heated not so?
P yes
T what have I said when as a liquid get small when does matter get small? when does matter contract when it is done what?
P it is cooled down
T when it is cooled down it? contracts when does it increase in size when does matter increase in size? Kevin when does matter increase in size?
P when it is heated

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

T when it is heated nice when it is heated matter expands now can you get out your science books and write something (.) get out the science books (.) write the headings as properties of?

C few matter

T but before we write then there is something that we are forgetting that matter should have some weight that is what I fail to mention that matter should have some weight and should occupy space for example look at this way yes that's vibration that's vibration in science we call it what?

Choral vibration

T can you keep it very firm that one very good boy ( ) now matter is anything that occupies space and it should have some weight like for example this one this this chalkboard (.) blackboard ruler when you place it here its occupying this space the whole of this space are you are you seeing?

C few yes

T it is occupying this space and when you try to lift it is having some weight and this is now matter so it should occupy space and it should have some weight let's write

(children writing and teacher drawing on board 10 minutes)

T ball and ring is an experiment what shows that soils like these look this end ball and ring experiment which shows that salts expand when they are heated for example this is the ball and this is the ring (.) when the ring this ring is pulled for example when this one is pulled then it can be able to enter into that ball are we together?

C few yes

T when this one is pulled it can be able to enter into this (hole of) ball but when you heat this ball so that it can increase in its size so that it becomes big it will not be able to enter into this hole or into this ball this shows that soils can expand when heated this was an experiment that was carried out and it was discovered that metal any salts can expand when heat is exposed (into) them so that when this ring fails to enter into that ball then it shows that it has at least increased in? size that is why it is refusing to enter there are we together?

C few yes

T yes you can copy that then ( )

(children writing 5 minutes)

T so are we finished?

Choral yes/no

T I have already finished here it is here now what we said what matter is what is matter?

P teacher

T who can remind me? what is matter?

P matter is something that occupy space

T occupies space good and who can complete?

P weight

T and it must have?

C few weight

T and we have also said that it exists in three forms you must get them into three forms what are these three forms?

P gas

T eh

P gas

T gas

P solid

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

T solid
P liquid
T and liquid mention for me some examples of the solids solids?
P rock
T rock is a solid ( ) what else?
P sun
T the sun mention any other example of a solid
P table
T table
P doors
T doors
P biscuits
T biscuits are solid what else?
P wood
T wood what else?
P biro pen
T biro pen what else? what about liquids you can mention for me liquids very fast?
P juice
T juice is a liquid?
P paraffin
T paraffin
P porridge
T porridge
P oil
T oil
P water
T water what else yes?
P juice
T juice those ones are examples of liquids what about when we come to gas gases?
P nitrogen
T nitrogen somebody else try?
P teacher
P oxygen
T oxygen what else?
P ( )
T oh he has mentioned your answers now we have said that matter behaves in different ways when you put it in you put the matter in heat in another condition called heat then it will behave in a different way how will it behave when you put matter in on heat on heat? what will happen to matter? Ngure
P it will expand
T it will expand meaning that it will increase in? size what about when you remove it from heat and put it somewhere else to cool what will happen to it? it will have a contract which means it will have to reduce in ?
C few size
T so next time when we meet I will have to draw to draw and tell you what the experiment is you shall write notes about the experiment shall we and we shall learn about the next topic also about the properties of matter so till next time not so?
C few yes

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(.) = short pause, (.) long pause, ( ) unclear

Appendix 2b

Interview transcripts

English, transcript 10

Maths, transcript 4

Science, transcript 12

I How did you find the lesson?
T mmh
I how did you find that lesson? how did you think it was? were you happy with it?
T I was happy
I why were you happy? tell me
T because the students responsed responded well
I yes
T and they were getting what I was teaching them what they were learning
I was that a typical lesson? how do you normally do the lessons?
T yes that is how I do the lesson
I you use the a lot of examples as well as the visuals yes do you normally use examples?
T yes I normally use examples I use the children to make sentences I use the children most of the times
I right
T yes
I and do you get you get them to do choral a lot they do in unison yes do you think that is a good way of when all the children join in together?
T it is not always the best eh sometimes I tell them to do it individually
I *How do you decide how do you decide whether to have all the children together or you ask* one child? how do you choose which was?
T I don't get you
I sometimes you ask a question and you ask all the children and they all answer together (.) sometimes you ask just one child and what I am asking is how do you decide whether to ask all the children to say something or one child?
T (.) I just I use all the children to answer the question and then after that I ask them individually
I right so you do how do you choose the individuals?
T from all the groups
I okay so you have different groups in here?
T there are different group
I which groups do you have?
T I have group A group B and group C
I okay right
T they are according to the ability (.)
I right what do you with those different they sit together do they?
T they don't sit together
I okay
T they sit according to their ability
I okay so how and then what do you do what does group A do differently from group B or C
T I give those who are weak I give them easy work the others can do even harder work
I so like you did before everyone started doing the same and then you told these ones to continue with more examples
T yes more examples continue with more examples and those who are weak (.) they are slow in writing and so
I they have more time then you ask them to do a lot I see if a child gets something wrong when you ask a question what do you do when the child is wrong? If a child gives a wrong opposite?

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(.) = short pause, (.) long pause, ( ) unclear

T opposite I
I if the child gives a wrong word
T I correct the child
I okay correct the child and if the child is right what is the normal thing that you do?
T I tell the other children that that is correct
I okay and when they were working some of them were still working and some of them were finished
and then you stopped them to tell them to close their books and then you did some more examples
T yes I wanted to give them more examples because of the faster children.
I right
T so that those faster children can continue (.) working more
I Do you often do that?
T they can be idle
I right so you do often do that
T yes
I they are working and you stop them to give them more
T yes I give them more
I so how would you follow this lesson how what what would you do in the next lesson with the
children? these same children
T the same children?
I yah how would you follow this what is the next lesson?
T the next lesson we will write in sentences the opposites we will write in sentences and not in single words
I And what problems do you think there are when you teach in English? What problems do you have
generally with the children?
T with understanding (.) understanding
I and why is that?
T especially reading and understanding
I yes and how do you help them?
T by giving them reading using teaching aids
I okay
T yes
I so you bring the aids in?
T yes
I okay
T they bring more aids to the classroom
I Do you teach class one as well?
T Ati, class
I one do you teach the very young ones
T I don't teach those ones
I okay do you teach class 2?
T I have taught before
I okay what do you do differently with the very very beginning the children who are beginning from
nothing how do you help them?

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

T ... from standard one
I ... yes, how do you help those?
T ... those ones start from learning alphabet
I ... oh okay the alphabet first
T ... Emm alphabet and sounds
I ... and sounds then we go to phrases? okay so you were happy with that lesson
T ... Thank you very much

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

INTERVIEW
Subject: MATHS – Lesson title: DISCOUNT AND SALE PRICE
Standard 7 – Male Teacher

INTERVIEW

I So can you tell me what do you think about that lesson? what's your thoughts on it?
T the lesson?
I yah how did you find it?
T it is good but the time was not enough
I wasn't enough time?
T I could not mark all the books and maybe I think the children are too many and ah but generally I can say it is good
I and if you did the same lesson again you know would you change anything? If you could do the same lesson with the same children again would you do anything differently?
T ah can I do anything different when I'm what are you saying?
I no I was just asking that if you had to do this lesson again with the same children would you do anything differently next time?
T yah I would do something different
I what would you do? how would you do it? the same lesson how would you change it? if you had to
T er I would encourage the pupils to participate
I okay
T fully in the lesson
I how how would you do that?
T maybe by er asking questions I let them do some problems on the board
I you did that though
T ah something like that if it is necessary I can also use teaching aids er
I ah when you ask a question how do you choose which child to answer?
T the last one?
I mm any question when you ask how do you decide on the child?
T er that is depend on maybe you know (.) I choose the from one row then next time the next question I choose somebody from the row which is at the center and then the other row like that I try to distribute the questions evenly
I so all the children sitting in ability groups?
T no they do sit in ability
I they sit free?
T yes but at time you can find that those who are bright are on the other row but it is not the teacher who have tried to nini
I it is (.) they decide themselves?
T yah
I yah and when a child answers a question correctly what do you normally do?
T I'm suppose to reward orally maybe good very good excellent something like that though this time I could not use those comments but that is what I am suppose to do
I and if they get it wrong what do you do if the child gets it wrong?
T I try to eh encourage the child
I do you use Kiswahili at all sometimes to explain?
T yah sometimes I use Kiswahili
I or another language do you find that helps?
T it helps because there are those who don't understand English
I that's a problem how can you check that the children understand? how do you know if they understand the lesson? like now after this lesson how do you know which ones have understood?

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(.) = short pause, (.) long pause, ( ) unclear

T er after giving them an exercise
I right
T once I have marked it I will be in a position to know that they have understood or not so if they have not understood then I can teach them again those who maybe have got problems in working I can try to find time and I do remedial teaching
I remedial teaching?
T yah
I eh when you gave the questions some children finished very quickly and some are more slow...
T it is that I think those ones finished quickly they are the bright ones and who are slow they are the one who they are the one who are somehow weak
I right but the ones who finish quickly what can they do while they are waiting they have to wait?
T no I am supposed to I normally give them more work
I ah more okay and you what about the slow ones?
T the slow one that that is when I assist I am suppose yah I normally assist them
I I was wondering you had one very tricky sum one difficult sum at the beginning that one to do with the percentage
T okay that one of percentage
I that was a very tricky one that involves long division
T yah I was
I was it normal that one?
T eh
I that was that a normal question? It was quite a difficult one because it involved long division
T no it was not hard it was not hard only that the division was somehow tricky the question was not hard the division must give them the problems problems
I and and how do you think the children generally how do you think they learn the maths best? What do you think the best ways are for them to learn mathematics?
T what the method
I yah what do you know what do you think is the best way to help children to learn the mathematics?
T aah
I here in Kenya?
T aah one aah they should yani we should be given more time especially in mathematics because it is hard and you know the the children have got that negative attitude towards the subject they they say that its hard that's their opinion yah so I think that eh the government should eeh give us more time maybe it should eeh especially in this primary level they should reduce the number of subjects there are subjects which are not necessary in 8-4-4 system of education so I think that time when we maybe we are suppose to teach another subject which is like Music that is the time when you can teach maths because you know they take it as a hard subject
I yes why do they think? why do they find it hard? why do you think they find it hard? the mathematics
T you know you know somehow they don't like reasoning that is the problem reasoning that is a problem they like to be given something which is direct
I yah
T so if it a question a direct question
I oh alright

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

T they don't like something they will just sit there start thinking reasoning eh?
I yah what do you mean by a direct questions?
T shortcut maybe let's say you know in mathematics eh tricky question answered you have to think you have to reason so and there are questions which are direct there are questions which are maybe if it is a sum instead of if it is a question instead of bringing that question eh in statement form like a comprehensive we eh they bring it like ten plus twenty
I right
T but you can see that is a direct question a direction problem
I yah
T but when it comes to setting of exams like KCPE they they try to pick tricky questions such that you have to read you understand the English then after understanding you analyze you interpret the question then you reason so that you can start working
I how much do you think the English is as problem because they have to do maths in English is it a big problem for them?
T the problem is that because of the the environment here you know once they go home they don't talk English they that is not their language of communication. So that is why you can see English understanding English is a problem to them mmh they don't they are not conversant with such such that when they are ah a question is brought in English eh it gives them problems of and maybe it is not hard but because they are not understanding what what they are suppose to do?
I so how can you help them with the English what can you do as a maths teacher?
T as a maths teacher I think first ah I should try to communicate in English I use simple English that they can understand then I encourage them to talk in English and I give them a lot of exercises and maybe I can use teaching aids and the other teachers like those who teach English should also be encouraging them to talk in that language
I mmh cause I was thinking that when the child was working on the board one of the girls she should she should have explained what she was doing
T yaya
I me I can even I couldn't follow I couldn't understand what she was doing but she got the right answer.
T but but the problem is I explained explaining in English is a problem that is why you could see they could not do it?
I no
T but they know they can do it they know they have got that they know how but now explaining it up there is a problem
I really so we need to help them
T even the bright ones you can see the bright ones can do it on the board alone but they cannot explain
I do you think they could explain in their own language
T I think they can
I they could they could explain in the own language
T but you know the problem there ah they belong to different tribes
I right
T so they have to use different languages the only language which they can use is Kiswahili when I know I think is they are conversant
I so you think they could explain in Kiswahili not the maths it is the language which is a problem?
T yes

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

I one more question what other problems do you face in teaching mathematics?
T one is that we don't have enough textbooks
I right
T like now they are supposed to buy these books
I right this one
T yes this one and you see maybe it is only ten pupils who have the textbooks and when you give them homework they don't finish it on time because they don't have the books they can't do it at home yes so that is another one problem and again is the eh the teaching resources like we are suppose to have ( ) maybe a geometric set
I yes
T chalkboard like one we use at the chalkboard the one we are suppose to use is only the smaller one ( )

(tape out)

T geometry and I have to use the set square and I have to use the blackboard ruler and so they are no there so again time is another fact which is not mathematics give it enough time and er we have got poor attitudes towards the subject yah
I because they I think it's hard
T yes they just they have it in mind that mathematics is hard so that is a problem and you know mathematics is not hard it is easy because it is just working it is not something that you have to cram you only do the formula and after getting the formula understanding the question you start working out so it is not hard but they take it as hard subjects
I thank you very much.

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

INTERVIEW

I how did you find the lesson? how did you think the lesson was?
T the lesson?
I yes
T the lesson anyway the motivation was well and they had the pupils have picked up they have acquired my objectives what I wanted
I and how do you find the participation of the children?
T they are really participating in it
I okay so how do you try to encourage participation
T pardon?
I how do you encourage everyone to participate?
T okay I must first of all get humour (.) orientate the children so that they can at least feel science is easy going
I right
T because you ask them the very things they see that what is the things you see around they can be able to mention them from there you can tell them that is all about matter and they can be able to participate because everyone at least can see what is before him or what is infront of him
I and the children on this side are they more able children brighter brighter ones they seem like that more children here put their hands up
T okay
I on this side
T it is according to the capability of a child
I I just wondered if they have the more able sitting here the other side is more boys
T eeh
I yes do you find it any difference with the girls and boys?
T no if its now its this way those ones who can be able who have capability of getting very very quickly they are put in one place so that you give time and ( ) go and bring them up so when it comes to a question
I yes
T on answering work to do I give much of the time
I oh I see
T to the other row than those ones because these ones have already picked up
I oh okay so you give more time?
T yes
I so was that a typical lesson? you gave a short input you talked about something and then you wrote on the board and then you summarised was that typical for you was that a typical lesson? do you always write something on the board some information?
T yes
I do they have textbooks?
T they have they have (.) they have at least
I some of them yes so why do you write on the board could they use their textbooks?
T no for simplification of work
I okay
T they can read but don't understand
I right
T but I can go through the notes the book infact I don't just duplicate the words in the board I simplify

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

I yes I see
T in easier language so they can understand
I could they do you think that they could write it for themselves
T the notes?
I yes if you asked them to say you did the input and then you said to them now write something what would they do?
T they cannot write
I they can't do it?
T they cannot write
I that's a shame could they write anything at all?
T they do they lack what you call reading and understanding
I really?
T what's what's really these in a content they can't they can't they cannot
I and why do you think that is?
T one it is the let me say it's that parents so (what) that time cannot be available whereby you can go from topic to topic ( ) yes so there's a workloaad of the subjects ( ) so a child may not be having time really to copy the notes or to have to have notes for herself or himself
I really
T it's very hard
I ah really so it is a quicker if you write it and they copy it?
T very fast and in simple language that they can understand
I so you think their English is a problem then to the children?
T it is t is because it is a mixed up with Kiswahili which has got rooted in Nairobi
I so how about if they if their lessons were in Kiswahili would it be different?
T ( ) they are in Kiswahili?
I yes if everything was not in English it was in Kiswahili would they find it more easy you think?
T some some of them like ah the people born from the same place but we have those ones who are from the village who have come this way because of so you can be able to hear English more than Kiswahili that is why we are to use only Kiswahili ah English
I English?
T all the time
I do you use Kiswahili sometimes to explain?
T no no I don't. if need arises whereby they have really failed to achieve my objective there that I can chip in
I okay so do you find any differences in the girls and boys in science lessons at all
T I do I do
I what's the difference you find?
T the difference is that boys tend to do it more well than girls
I why is that?
T girls think that say that its the boys subject because they the one ( ) for example if they go for engineeringship and whatever they are the ones that are going to achieve more and these ones they like light light work which of course science is ( ) for that in future to come
I okay so the boys like science
T they do
I do you think the children generally the children like science?
T they do (.) they should all of them should

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

I okay can I ask how do you select when you ask questions how do you select who to answer?
T I just random
I random and do you try and ask in the different places in the class?
T yes
I I noticed that sometimes you ask questions and all these children put their hands up but you ask on the other side you ask the other ones who are there sitting like this yes?
T not really
I no I think ( ) they were putting their hands up but you were also giving attention to the other ones the ones who didn't have their hand up
T those ones who didn't have their hand up they we have what we call remedial teaching
I right
T from there I am going to assess
I okay
T I am going to assess on the topic I have taught
I okay
T by setting the questions to motivate them now in case they have not done well I will now have to identify those individuals in ( ) then from there I will have to give them proper attention of ( ) remedial teaching in the evening
I in the evening? so in teaching you ask a lot of questions teachers ask a lot of questions
T yes
I why do you think its a good thing?
T it is easier for them to remember for memory purpose so if you ask a question then answer you can be able to tell it somewhere else
I ah okay its involving yes?
T yes
I and what kind of questions do you ask generally do you ask different types of questions or
T different types of questions but on in the same content of what you have schemed as lesson plan for that day
I okay and how about some children their English they might have been able to answer the question very well because of their English maybe they can understand the science but what do you do if the English is bad when they are answering they are having a problem to explain what they mean?
T ( ) If they explain to me in Swahili I will have to understand I will be able to know the objective he has achieved it
I okay and one other thing when you ask the whole class to repeat something or to answer together ah can you explain why that's good why it is good to ask the whole class sometimes to repeat you know just one word or you know or to say something together
T okay this is the if they say in a chorus together
I yes that's right why? tell me about that
T it is well so that one who have not even understood
I right
T through the chorus can also be able to (.) imitate and also so they can join in? they can join in they can also acquire the objective
I so if you were teaching do you think you would teach in the same way or different way? If you were teaching in (.) what's your language?
T what is?
I what is your first language?

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

T it is Kiluya
I so if you were teaching in that language to children who were the same you would you teach in the same way or would you teach differently if you all spoke the same Mother tongue
T if all we speak mother tongue?
I that's right if everything was in your own language
T I could be able to explain for them and then they will get me correct
I so how do you think do you think you will be you mean you will be able to teach more or faster ( ) how would it be differently?
T yes yes from there I will be able to go very faster and I will have to cover a lot for example when I talk about something that one I will have to speak in the language that you understand what it is and from there I will not waste a lot of time
I so it will be easy?
T so it will be easy very easy
I thank you very much

Key: T= Teacher, P= Pupil, Choral = Pupils altogether, C few = Few pupils together, I = Interviewer
(.) = short pause, (.) long pause, ( ) unclear

Appendix 3

Stage 1 Questionnaire, Pilot 1

QUESTIONNAIRE - PILOT 1

PLEASE TRY TO ANSWER THE QUESTIONS IN RELATION TO YOUR OWN TEACHING

Section A

In this section please circle the answer which is nearest to your own thinking or experience

1. Does your own teaching style reflect

a. how you were taught
b. how you were taught to teach in college
c. the school you are working in d. Other

2. I think children in Kenya are generally viewed as

a. young adults
b. to be seen and not heard
c. as individuals
d. Other

3. I think it is important that pupils talk to each other

a. Sometimes
b. Not really
c. Yes

4. I prefer to teach the whole class together

a. Always
b. As often as possible
c. Most of the time
d. Sometimes
e. About half of the time

5. Who do you think should talk most in the classroom

a. Teacher
b. Pupil
c. neither
d. other

7. The children in my class work in groups

a. Sometimes
b. Occasionally
c. Not very often
d. Hardly ever
e. Never

8. I think that the teacher needs to lead all the classroom talk

a. Strongly agree
b. Generally agree
c. Not sure
d. Disagree
e. Disagree strongly

9. I use the same teaching approaches for teaching English, Maths and Science?

a. Yes
b. No

10. When I have asked the class a question I usually select a child

a. With their hand up
b. With their hand not up
c. Who is calling out
d. Who is not paying attention
e. In relation to gender, that is girl\boy/girl\boy
f. Other

11. How much of the lesson time do you think you ask whole class questions?

a. Most of it
b. About two thirds
c. About half
d. Less than half
e. not sure
f. Other

QUESTIONNAIRE - PILOT 1

12. How much of the lesson do you think the children talk?

a. Most of it
b. About two thirds
c. About half
d. About a quarter
e. Less than a quarter
f. Not sure
g. Other

13. How often do you ask questions that you don't know the answer to?

a. Never
b. Rarely
c. Occasionally
d. Often
e. Very often

14. When pupils talk to each other when they are working I feel .....

a. Worried
b. Impatient
c. Annoyed
d. Pleased
e. Unsure
f. Not in control
g. Other

15. I ask questions which require children to complete a sentence with word or two

a. Usually
b. Very often
c. Quite often
d. Sometimes
e. Not very often
f. Rarely

16. I ask pupils questions which require a yes or no answer

a. Usually
b. Very Often
c. Quite often
d. Sometimes
e. Not very often
f. Rarely

17. I ask questions which require children to give factual answers

a. Usually
b. Very Often
c. Quite often
d. Sometimes
e. Not very often
f. Rarely

Section 2

In this section you have to number the answers according to what you think are the most important factors. For example if you think a. is the most important you would give it 1, then if you thought b. was the next most important you would give it 2. If you think two answers are equally important you can allocate them the same number.

18. The main purpose of the questions which 1 ask pupils

a. To check their understanding
b. to revise the topic
c. as a starting point for a topic
d. to find out children's ideas
e. to find out what they think
f. to make sure they are listening
g. other

19. I see my role in the classroom as being .....

a. to teach the children new things
b. to prepare the children for the KCPE
c. to prepare the children for life
d. to guide the children
e. to get the children to think
f. to help the children develop all their skills
g. other

20. I think that the main advantage of children working in groups is that .....

a. the teacher does not have to do all the talking
b. they can share any books or resources
c. they enjoy it
d. they learn from each other
e. the clever ones can help the less clever
f. they can achieve more
g. other

21. When a pupilgives the right answer I usually .....

a. nod
b. Say Yes
c. ask another child if it right
d. ask the same child another question
e. ask the class if the child is right
f. ask another child another question
g. praise the child
h. repeat the answer
i. elaborate on the answer
j. Other

22. When a pupil gives the wrong answer I usually .....

a. say no that's wrong
b. ask the class if she/he is right
c. ask the same question to another child
d. ask the child the question again
e. reprimand the child
f. ask another child the same question
g. rephrase the question
h. give the right answer myself
i. Other

23. If I ask a pupil a question and they don't respond at all I usually .....

a. Wait for a few seconds
b. repeat the question
c. rephrase the question
d. ask another child
e. ask the class
f. wait for more than a few seconds
g. give the right answer myself
h. Other

24. In my classroom when pupils talk it is .....

a. in response to a question
b. to their classmates about their work
c. to their classmates about equipment, pens, pencils
d. to ask me a question
e. to members of their group
f. to the whole class to explain something
g. Other

Appendix 4

Stage 1 Questionnaire, Pilot 2

QUESTIONNAIRE - Pilot 2

PLEASE TRY TO ANSWER THE QUESTIONS IN RELATION TO YOUR OWN TEACHING

Section A - General

Please try to circle the letter which is the most appropriate to you. If you circle 'Other' please explain in the space below the question.

1. I think that I teach the way ... .

a. I was taught myself at school
b. I was taught to teach in college
c. the school I am working in requires
d. other

2. I think children in Kenya are generally viewed as ...

a. young adults
b. to be seen and not heard
c. as individuals
d. Other

3. I think that the teacher needs to lead all the classroom talk

a. Strongly agree
b. Generally agree
c. Not sure
d. Disagree
e. Disagree strongly

4. In my lessons children talk to each other about their work....

a. A lot (at least 3/4 of the time)
b. Sometimes (around 1/2)
c. Not too much (around 1/4)
d. Very little

5. I encourage the pupils in my class to talk to each other in....

a. their Mother Tongue
b. Kiswahili
c. English
d. Other

QUESTIONNAIRE - Pilot 2

6. When pupils talk to each other when they are working I feel .....

a. Worried
b. Impatient
c. Annoyed
d. Pleased
e. Unsure
f. Not in control
g. Other

7. I prefer to teach the same lesson to the whole class .....

a. Always
b. A lot (8 out of 10 lessons)
c. Sometimes (6 out of 10 lessons)
d. Not very much (4 or less out of 10)

8. The pupils in my class work in groups

a. Often (8/10 lessons)
b. Sometimes (6/10 lesson)
c. Not very often (4/10 or less)
d. Hardly ever (2/10 lessons)
e. Never

9. I think that the main advantage of children working in groups is that .....

a. The teacher does not have to do all the talking
b. they can share any books or resources
c. they enjoy it
d. they learn from each other
e. the clever ones can help the less clever
f. they can achieve more
g. the children can talk to each other
h. other

10. I think that generally my main role as a teacher is .....

a. to teach the children new things
b. to prepare the children for the KCPE
c. to prepare the children for life
d. to guide the children
e. to get the children to think
f. to help the children develop all their skills
g. other

QUESTIONNAIRE - Pilot 2

11. I use the same teaching approaches for teaching English, Maths and Science?

a. Yes
b. Generally
c. No

12. I would like to do much more .....

a. Whole class discussion
b. group work
c. paired work
d. outside work
e. project work
f. peer teaching
g. other

13. Which core subject/s do you think requires the most teacher's talk?

a. English
b. Maths
c. Science
d. Other - please give

14. Which core subject do you think requires the most pupils' talk?

a. English
b. Maths
c. Science
d. Other - please comment

15. The questions I mostly ask my pupils are .....

a. To check their understanding
b. to revise the topic
c. as a starting point for a topic
d. to find out what they think
e. to make sure they are listening
f. to keep them interested
g. other

QUESTIONNAIRE - Pilot 2

Section B - Teacher Initiation

Please ring a number which most reflects your answer.

For example

Q. How often do you read the newspaper?

Rarely *Very often*

1 2 3 (4) 5

(If you ring 4 it means that you go often but not very often)

16. How much of the lesson do you ask the whole class a question?

Very little Most of the time

1 2 3 4 5

17. How often do you ask pupils questions which you can't answer

Rarely Very often

1 2 3 4 5

18. How often do you ask questions which require pupils to complete sentences

Rarely Very often

1 2 3 4 5

19. How often do you ask pupils questions which require a yes or no answer

Rarely Very often

1 2 3 4 5

20. How often do you questions require children to recall factual information

Rarely Very often

1 2 3 4 5

QUESTIONNAIRE - Pilot 2

21. How often do you ask questions which encourage the pupils to share their thinking?

Rarely — Very often

1 2 3 4 5

22. How often do you ask questions to find out what the children may already know?

Rarely — Very often

1 2 3 4 5

27. I think children learning English should not talk in their Mother tongue in class

Disagree — Agree strongly

1 2 3 4 5

Section C - Teacher Evaluation

Circle one answer which is nearest to your normal practice.If you have any comment to make please make it in the space after the question.

28. Mostly pupils in my class talk .....

a. in response to a question
b. to their classmates about their work
c. to their classmates about what they have to do
d. to their classmates about borrowing/lending pens, pencils etc
d. to ask me a question
e. to members of their group
f. to the whole class to explain something
g. Other

29. When I have asked the class a question I generally select a child

a. With their hand up
b. With their hand not up
c. Who is caling out
d. Who is not paying attention
e. In relation to gender, that is girl/boy/girl/boy
f. Other

QUESTIONNAIRE - Pilot 2

30a. When a pupil gives the right answer I generally first of all .....

a. nod
b. say Yes
c. Praise the child
d. Other

30b. After this I am most likely to ...

a. rephrase the answer the child has given
b. repeat their answer
c. ask the same child another question
d. try to find out more about their understanding
e. elaborate on their answer
f. try to link what the child said to my next teaching point
g. continue with the lesson
h. move onto another child
i. ask the class if she/he is right
j. Other

31. When a pupil gives the wrong answer I generally .....

a. tell them it Is wrong
b. repeat the question to the same child
c. rephrase the question
d. ask the class if she/he is right
e. ask another child the same question
f. reprimand the child
g. give them the right answer
h. Other

32. If I ask a pupil a question and they don't respond at all I generally .....

a. Wait a few seconds
b. repeat the question
c. rephrase the question
d. ask another child
e. ask the class
f. wait for more than a few seconds
g. give the right answer myself
h. Other

Appendix 5a

Stage 2 Lesson Transcript Analysis Sheet (LTAS)

Lesson transcript analysis

Date:_____

Name of school	
Subject	
Lesson title	
Standard	
Teacher (male or female) M or F	

No	Item	Number counted
1	How many teacher inputs = T	
2	How many question marks = ? by teacher in total (same as 3 + 4)	
3	How many question marks = ? at end of sentence (i.e. teacher pauses for response)	
4	How many question marks = ? in middle of sentences (i.e. teacher continues without pause)	
5	How many pupil responses were = Choral	
6	How many pupil responses were = C few	
7	How many pupil responses were = P	
8	Total number of pupil responses (5 + 6 + 7)	
9	How many pupil responses not clear = P ( )	
10	How many pupil responses = P of one word only	
11	How many pupil responses = P of 2 or 3 words	
12	How many pupil responses = P of 4 or more words	
13	How many pupil = P responses altogether (9 + 10 + 11 + 12 should be same as answer to No. 7)	
14	Number of lines in lesson transcript (not interview)	

Appendix 5b

Stage 2 Lesson Transcript Analysis Sheet (LTAS)

Lesson transcript analysis

Date:_____

Name of school	
Subject	
Lesson title	
Standard	
Teacher (male or female) M or F	

Teacher related questions

No	Item	Totals
1	How many teacher inputs = T	
2	How many question marks = ? by teacher in total (same as 3 + 4)	
3	How many question marks = ? at end of sentence (i.e. teacher pauses for response)	
4	How many question marks = ? in middle of sentences (i.e. teacher continues without pause)	
5	How many questions required a Yes or No answer?	
6	How many questions required a sentence to be completed?	
7	How many questions required repetition?	
8	How many questions required repetition and completion?	

Pupil related questions

No	Item	Totals
9	How many pupil responses were = Choral	
10	How many pupil responses were = C few	
11	How many pupil responses were = P	
12	Total number of pupil responses (9 + 10 + 11)	
13	How many pupil responses not clear = P ( )	
14	How many pupil responses = P of one word only	
15	How many pupil responses = P of 2 or 3 words	
16	How many pupil responses = P of 4 or more words	
17	Number of lines in lesson transcript (not including interview)	

Appendix 5c

Stage 2 Lesson Transcript Analysis Sheet (LTAS)

Lesson transcript analysis

Name of school		**Date**	
Lesson title		**Subject**	
Teacher (male or female)	**M or F**	**Standard**	
Number of lines in lesson (not including Interview)			

Teacher input

No	Item	Totals
1	How many teacher inputs = T	
2	How many Direct Repetition (DR)	
3	How many Direct Completion (DC)	
4	How many Direct Repetition and Completion (DRC)	
5	How many questions required a Direct Yes or No (DYN)	
6	How many questions were rising intonation (?) in middle of sentence	
7	How many questions in total ie (?) at end of sentence, waiting for response	
8	How many Instructions (I)	
9	How many continuations (TC)	

Pupil related inputs

No	Item	Totals
10	Total number of pupil responses	
11	How many pupil responses were = Choral	
12	How many pupil responses were = C few	
13	How many pupil responses were individual = P	
14	How many pupil responses (P) were Yes/No	
15	How many pupil responses = P were one word only NOT Yes/NO or reading	
16	How many pupil responses = P of 2 or 3 words (*not reading*)	
17	How many pupil responses = P of 4 or more words (*not reading*)	
18	How many pupil responses not clear = P ( )	
19	Cross check that 13, 14, 15 and 16 add up to same as 12.	
20	How many pupil (P) reading out loud (*written in italics*)*	
21	How many Choral pupil reading out loud (*written in italics*)*	

* When it says *(reading)* don't count number of words

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Appendix 6

Stage 2 Lesson Field Notes

Field Notes

Baba Dogo Plurals English Lesson, Standard 5, English Teacher '

Field notes
43 pupils. Teacher begins by writing on the board ' Naming words' . then she writes Mother - Mothers; Book -- books: fly-
Not Many children put their hand up, about a third at most at any time. But about half volunteer to read out the examples given in the textbook.
She questions children who are quiet.
Children seem quite distracted. Only about six hands up. Teacher is obviously having to concentrate on the book. One child is clapped, another reprimanded. She says 'those people who have not talked'
Interesting that when she picks on children who do not have their hands up they can't answer the question.
At one point teacher sighs ' 1 know you know..' There is confusion over the question relating to libraries.

Synopsis of the lesson
This lesson is a reminder of the work on plurals they did and then using it to complete an exercise in an English textbook.

Teacher takes them through plurals of words ending with 'Y' and then words ending 'F E'
Then we go to an exercise which involves putting the missing word into a sentence.
Other examples of plurals are discussed, 'man and woman' to men and women
Lesson progresses in a straightforward way, no diversions, focus remains plurals.
Interjects during the exercise to remind them of the rules for plurals. Corrects pronunciation and adds explanations where necessary. Teacher's role is to keep children attentive, tell children to speak up, sometimes remind them of the plural rule, sometimes repeat the phrase, select children to answer....

Observations
Children's answers are always one or two words, apart from when directly repeating, eg line 174 'sometimes sheep get disease in their feet'.

Opportunities missed to involved children, for example when discussing the use of the plural 'lives' in relation to people staying in the same area all their lives, the discourse is:

T he said like this or he read like this before there were any cars and buses people often staved in the same area all their?
P lives
T they were not moving because there were not cars, there were no buses and they could not move or they could not walk for long distances because there were no cars (.) today do you walk for long distances
P no
T no even himself cannot foot but those people used to foot for long distances but not very long because they could get tired and faint on the? Way because there was no cars and what
Choral buses

Field Notes

T there were no cars and?
C buses

Here is missed opportunity to ask the children about why thought people didn't move much in the past and to discuss how people travel in the present day.

Teacher follows the exercise but lack of ownership on her part is reflected by no knowing whether one of the given words has to be used only once in filling in the gaps or can be used in two different places.

T we can use two words I think twice yes because some words are in demand some sentences sentences will also want two words so even if you use two words one (.) word twice don't worry okay? (L284 - L285)

....T yes because they don't match the dashes 1 think the dashes are more eh (L288)

Here teacher is in the same situation as the pupils in not being quite sure of what is required of them - this is interesting paradox as the teacher who is complete control of the lesson is herself controlled by the textbook.

Praises the children
Very good - 18 times as part of her response

Encourages the children to talk louder -

T ...give Robie time we want to hear his sweet voice
T ...listen to him
T very good is he right (.) did you hear what he said
T Daniel have you heard what she said
P No
T because you are not listening

T everyone should try if even if you make a mistake you'll be? Corrected (.) even if you make a mistake you'll be done what? Corrected so don't fear Victor

Later makes a mistake and asks who has observed it

T who can see that mistake with me? Put up your hand if you can see that mistake..... I want to see that person who will correct me (.) Daniel do you want to correct me?
P yes
T good boy let us listen to Daniel....
T that is beautiful he can stand and correct me that is good

Interview
Asked if would change anything if taught the same lesson. Replied No (398) but then said

T but maybe now I'll improve

Field Notes

Had to assure the teacher that I was not saying that she necessarily needed to change anything just asking her opinion.

T maybe it needed some more research

Asked her what kind of research

T maybe you look for all these words and then you have at least more time to explain to the children but now you find that 1 was just dealing with the ones which - were in their textbooks

Should have followed this up and explored about planning time - but does indicate of planning over reliance on the textbook.

Appendix 7

Stage 2 Questionnaire

Questionnaire

General information

Please give the following information to help in the analysis of this questionnaire

1	Gender *(Male or Female)*	
2	Total number of years of teaching	
3	Subjects you teach *(now)*	
4	Standard(s) you teach *(now)* *(circle all the classes you teach)*	Pre-school 1 2 3 4 5 6 7 8
5	Level of qualification	
6	Number of children in your class	
7	Briefly describe your school - e.g. rural or urban, large or small, very poorly resourced, averagely resourced, or quite well resourced	

Section A - General attitudes

This section explores your general attitudes towards teaching and learning. Please try to circle the letter of the answer which you feel matches your own feeling. If you circle 'Other' please give an explanation in the space below the question.

1. What do you think has been the biggest influence on the way you teach?

a	The way I was taught at school.	b	The way I was taught to teach in training college.	c	The other teachers in the school where I am working	d	Other (please explain)

2. Do you think most people in Kenya think that children....

a	are young adults	b	should be seen and not heard	c	are all individuals	d	are our future leaders

3. Do you agree that the teacher needs to do most of the classroom talking?

a	Strongly agree	b	Generally agree	c	Not sure	d	Disagree	e	Disagree strongly

4. In your lessons how much do pupils talk to each other about their work?

a	a lot (at least ¾ of the time)	b	sometimes (around ½)	c	not too much (around ¼)	d	very little

Questionnaire

5. Do you encourage the pupils in you class to talk to each other about their work using Mother tongue?

a No	b Sometimes	c Yes	d Other (comment)

6. When pupils talk to each other when they are working do you feel?

a Angry	b That it is becoming undisciplined	c That they are not concentrating	d Pleased
e A bit unsure	f Other (comment)		

7. Do you think that all pupils in a class should be carrying out the same tasks at the same time?

a Yes all the time	b Usually	c No, not all the time	d Other (comment)

8. Do the pupils in you class do their work together?

a Often (80% of lessons)	b Sometimes (60%)	c Not very often (40%)	d Hardly ever (20%)	e Never

9. What do you think is the main disadvantage of children working together?

a They copy each other	b They work more slowly	c The teacher cannot tell if the children understand	d It is noisy	e Other - (comment)

10. What do you think is that the main advantage of pupils working together?

a The teacher does not have to do all the talking	b They can share any books or resources	c They enjoy it	d They can learn from one another
e The clever ones can help the less clever	f They can develop their language skills	g Other (comment)	

11. What do you think on the whole is your key role as a teacher?

a To cover the curriculum	b To prepare pupils for KCPE	c To help pupils become responsible adults	d To guide pupils in their learning
e To help develop the pupils' thinking skills	f To develop pupils' interest in learning	g Other (comment)	

12. Do you generally use the same teaching approaches for teaching English, Maths and Science?

a Yes	b No - (please explain)

13. Which core subject/s do you think require the most talk by the teacher?

a English	b Maths	c Science	d Other (comment)

14. Which core subject do you think requires the most talk by the pupils?

a English	b Maths	c Science	d Other (comment)

15. The kind of questions which I ask most in class are....

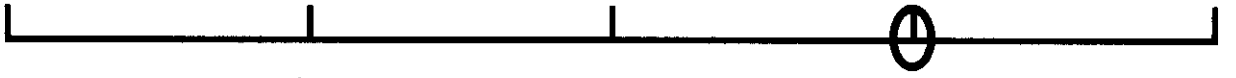
a	to check the pupils' understanding	b	to revise the topic	c	as a starting point for a topic	d	to find out what the pupils' think
e	to make sure they are listening	f	to keep them motivated	g	Other		

Section B - Teacher Initiation

This section explores the teaching approaches you use in the classroom. Please circle one number. For example:-

Q. How often do you read the newspaper?

Rarely	Occasionally	Half the time	Often	Very often
1	2	3	4	5



(if you ring 4 it means that you go often, but not very often)

16. How much of the lesson time do you ask questions?

Very little	Little	Half the time	Often	Most of the time
1	2	3	4	5

17. How many of the questions which you ask do you know the answer to?

None	A few	Half of them	A lot	All
1	2	3	4	5

18. How many of the questions which you ask require pupils to finish a sentence?

None	A few	Half of them	A lot	All
1	2	3	4	5

19. How many of the questions which you ask require pupils to give a Yes or No answer?

None	A few	Half of them	A lot	All
1	2	3	4	5

20. How many of the questions which you ask are to check on what children have understood?

None	A few	Half of them	A lot	All
1	2	3	4	5

21. How many of the questions which you ask encourage the pupils to explain their thinking?

None	A few	Half of them	A lot	All
1	2	3	4	5

22. How many of the questions which you ask require the class to answer in chorus?

None	A few	Half of them	A lot	All
1	2	3	4	5

23. How many of the questions which you ask are to revise a topic?

None	A few	Half of them	A lot	All
1	2	3	4	5

Section C - Teacher Evaluation

This section looks again at your teaching approaches. The response method is that you can choose up to three answers for each question, but you must number them according to the priority you give them, 1 = first choice, 2 = second choice, 3 = third choice. Look at the example below:

Q. In my spare time I like.....

a	watching television	1
b	reading the newspaper	
c	talking to my friends	3
d	reading a book	
e	playing with my children	2
f	sleeping	
g	shopping	

Now answer the questions below in the same way

24. Mostly pupils in my class talk .....

a	in response to my questions	
b	to their classmates about their work	
c	to their classmates to borrow equipment or clarify the task	
d	to ask me a question	
e	to the pupil sitting next to them	
f	to the whole class to explain something	
g	Other - please explain	

25. When I have asked the class a question I usually select a pupil.....

a	who has their hand up	
b	who doesn't have their hand up	
c	who is calling out	
d	who is not paying attention	
e	in relation to gender, that is girl/boy/girl/boy	
f	at random	
g	Other - please explain	

26. When a pupil gives the right answer I usually first of all.....

a	nod	
b	say 'Yes'	
c	praise the pupil	
d	ask the class if the child is right	
e	ask the class to give the child a clap	
f	Other - please explain	

27. If the pupil is right I am then most likely to .....

a	rephrase the answer the pupil has given	
b	repeat their answer	
c	ask the same pupil a probing question	
d	try to find out more about the pupil's understanding	
e	elaborate on their answer	
f	continue with the lesson	
g	ask the class is the answer is correct	
h	Other - please explain	

28. When a pupil gives the wrong answer I usually.....

a	tell them it is wrong	
b	repeat the question to the same pupil	
c	rephrase the question to the same pupil	
d	ask the class if the answer is correct	
e	rephrase the question	
f	give the pupil the right answer	
g	Other - please explain	

29. If I ask a pupil a question and they don't say anything I usually.....

a	wait for a few seconds	
b	repeat the question	
c	rephrase the question	
d	ask another pupil	
e	ask the class	
f	wait for more than a few seconds	
g	give the right answer myself	
h	Other - please explain	

30. I would like to do much more.....

a	whole class discussion	
b	group work	
c	paired work	
d	project work - in and out of the classroom	
e	peer teaching	
f	team teaching	
g	Other - please explain	

31. I feel that I can't always teach as I want to do because.....

a	the curriculum is overloaded	
b	the exams are so important	
c	the Headteacher would disapprove	
d	the Inspectors and other MoE officers would disapprove	
e	of the difficulties of teaching in English	
f	the pupils are not clever enough	
g	I haven't got the resources	
h	the other teachers would disapprove	

Appendix 8

Stage 2 Questionnaire - Database Sample

General info of Dbase 12

								Standard Class taught			Number of years in teaching				
ID	No of	Gender		School	Type	Size	Resources	Preschool	1 2 3	4 5 6 7 8	0-5yrs	6-11yrs	12-17yrs	18-23 yrs	>24yrs
	schools							4	104	264	37	114	78	56	73
		Female	Male												
1	7	5	2	Al-Huda Muslims	Urban	Small	Average resources	0	1	6	0	5	1	0	1
8	11	10	1	Arap Moi	Rural	Large	Average resources	0	5	6	1	3	1	4	2
19	1	0	1	Entasopia	Rural	Large	Poor/average resources	0	0	1	0	0	0	1	0
20	9	4	5	Ereteti	Rural	Small	Average resources	0	4	9	1	4	1	0	3
29	5	2	3	Eroret	Rural	Small	Poor/average resources	1	0	4	1	2	0	1	1
34	4	0	4	Esonorua	Rural	Small	Poor/average resources	0	2	2	2	2	0	0	0
38	10	9	1	Gakoigo	Rural	Large	Average resources	0	6	4	0	2	1	2	5
48	4	2	2	Ilbissil	Rural	Large	Average resources	0	1	3	1	3	0	0	0
52	6	3	3	Inaarok-Lukuny	Rural	Small	Average resources	0	3	5	2	1	1	1	1
58	8	3	5	Inyonyori	Rural	Small	Poor/average resources	0	3	5	3	3	0	0	1
66	9	8	1	Isinya	Urban	Small	Poor/average resources	0	4	5	1	7	1	0	0
75	21	14	7	Kabonge	Rural	Large	Average resources	0	6	13	0	4	7	0	10
96	19	8	11	Kagumo CCM	Rural	Large	Average resources	0	4	15	1	8	3	4	3
115	19	15	4	Kaitheri	Urban	Large	Average resources	0	6	13	1	6	5	4	3
134	11	10	1	Kajiado Township	Urban	Large	Poor/average resources	0	6	5	1	5	5	0	0
145	24	16	8	Kamuiru	Rural	Large	Average resources	0	7	24	0	6	5	8	5
169	4	1	3	Kerugoye School for the De	Rural	Small	Average resources	0	0	4	0	1	1	1	1
173	18	14	4	Kiangai	Rural	Large	Average resources	0	5	13	1	5	3	3	6
191	9	3	6	Kianwe	Rural	Small	Poorly resourced	0	1	8	0	2	1	3	3
200	9	6	3	Kiaritha	Rural	Small	Average resources	0	3	6	0	0	2	3	4
209	9	7	2	Magadi	Rural	Large	Poor/average resources	0	2	6	1	3	3	0	2
218	5	5	0	Moipei	Urban	Small	Poor/average resources	0	2	3	2	1	1	1	0
223	15	10	5	Namanga	Urban	Large	Poor/average resources	0	3	13	3	4	5	2	1
238	10	9	1	Naru-Moru	Rural	Large	Average resources	0	1	9	0	6	3	1	0
248	6	2	4	Ngatataek	Rural	Small	Average resources	0	4	4	1	5	0	0	0
254	6	3	3	Oldonyo-nyokie	Rural	Small	Poor/average resources	0	2	4	1	1	3	0	1
260	9	6	3	Olepolos	Rural	Small	Poor/average resources	1	3	5	3	3	1	1	1
269	3	0	3	Olkiramatian Arid Zone	Rural	Small	Poor/average resources	0	0	3	1	2	0	0	0
272	1	0	1	Oloirien	Urban	Small	Poor/average resources	0	0	1	0	0	1	0	0
273	8	5	3	Olooltepes	Rural	Small	Average resources	1	1	6	1	3	3	0	1
281	11	8	3	Olooseos	Rural	Small	Poor/average resources	1	2	8	2	3	2	1	3
292	6	2	4	Oltepesi	Rural	Small	Poor/average resources	0	2	4	2	1	2	0	1
298	10	8	2	Olteyani	Rural	Small	Poor/average resources	0	2	8	2	3	3	1	1
308	19	13	6	St. Joseph	Urban	Large	Average resources	0	5	14	0	3	6	7	3
327	13	3	10	Thunguri	Rural	Small	Average resources	0	3	10	0	4	4	3	2
340	20	12	8	Waigiri	Urban	Large	Average resources	0	5	15	2	3	3	4	8
360															
	359	226	133	36	Urban	Rural		4	104	264	37	114	78	56	73
					9	27									

Appendix 9

Stage 2 Questionnaire - Process of Analysis

ID	File	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
292	J05	B	B	D	A	A	D	C	B	A	D	F	B	A	C	A
293	J06	B	D	B	D	A	D	C	B	B	DE	C	B	ABC	C	A
294	J07	B	A	D	C	A	C	C	C	B	D	C	A	A	C	A
295	J08	D	C	E	B	B	D	C	B	B	D	E	B	A	C	A
296	J09	B	D	E	C	C	C	A	B	C	F	CF	B	C	A	E
297	J10	B	D	D	D	A	B	C	D	C	D	E	B	A	A	AD
298	J11	B	C	D	A	A	B	C	B	A	BD	E	B	A	A	A
299	J12	B	D	B	B	A	B	C	B	A	D	D	B	B	A	A
300	J13	B	D	B	B	A	B	C	B	A	D	D	B	B	A	A
301	J14	B	D	E	D	A	C	C	B	A	D	D	B	A	A	A
302	J15	B	D	E	D	A	C	C	B	A	D	D	B	A	A	A
303	J16	B	D	E	D	A	C	C	B	A	A	C	B	A	A	A
304	J17	B	D	E	D	A	C	C	B	A	D	D	B	B	A	A
305	J18	B	D	B	B	A	B	C	B	A	D	D	B	B	A	A
306	J19	B	D	E	D	A	C	C	B	A	D	D	B	B	A	A
307	J20	B	D	E	D	A	C	C	B	A	D	D		B	A	A
308	O01	A	D	D	B	A	D	C	B	A	B	C	A	A	A	A
309	O02	B	D	E	D	A	D	C	B	A	D	C	A	A	A	A
310	O03	C	C	C	B	A	D	C	C	D	B	C	A	A	A	B
311	O04	B	D	E	C	A	C	C	B	A	D	E	B	D	A	A
312	O05	B	B	A	D	A	A	A	C	A	D	A	A	C	C	B
313	O06					C	C	C	A		D	C	B	A	B	D
314	O07	B	C	E	D	B	D	C	A		A	C	B	A	C	D
315	O08	B	C	B	B	D	C	C	B	C	D	C	B	C	A	F
316	O09	B	A	D	B	A	C	C	C	B	D	D	B	A	C	F
317	O10	D	D	D	B	A	C	C	B	D	D	C	B	A	A	A
318	O11	D	D	E	D	A	C	C	B	C	D	C	B	D	B	D
319	O12	B	C	E	D	A	D	C	A	C	D	C	B	A	A	A
320	O13	B	D	D	C	A	C	C	B	A	D	D	B	B	A	C
321	O14	B	D	B	C	B	D	B	A	C	B	C	A	A	A	A
322	O15	B	C	E	D	A	D	C	B	A	D	C	B	A	A	A
323	O16	B	B	D	D	B	C	C	C	E	DEF	CF	B	A	C	ABE
324	O17	B	D	D	C	A	D	C	B	C	DF	CE	B	A	C	AB
325	O18	B	C	D	D	B	E	C	C	C	D	C	B	A	C	D
326	O19	C	D	B	C	A		B	C	C	B	C	B	A	C	A
327	S01	B	C	D	B	B	C	B	C	A	D	E	B	A	A	C
328	S02	B	C	D	B	A	D	B	C	C	F	C	B	D	C	A
329	S03	B	C	B	C	C	D	C	B	C	B	D	B	A	A	AC
330	S04	D	D	D	C	A	D	A	B	C	D	C	B	A	C	A
331	S05	A	D	D	B	C	C	A	B	C	D	C	A	A	A	A
332	S06	C	A	B	B	B	E	C	B	C	F	C	A	B	C	F
333	S07	A	C	B	B	C	B	B	A	B	A	B	B	A	A	A
334	S08	A	D	A	B	B	D	A	B	C	D	C	B	B	A	A
335	S09	B	C	D	B	B	C	C	B	C	E	D	B	A	C	A
336	S10	D	B	D	A	A	E	C	C	C	D	C	B	A	A	E
337	S11	B	D	D	C	C	C	C	C	A	B	C	B	D	D	B
338	S12	D	B	D	C	B	F	A	B	C	D	G	B	A	A	A
339	S13	B	A	D	B	A	E	B	C	A	D	C	B	C	A	C
340	M01	B	A	D	D	C	C	A	C	C	B	B	B	A	A	A
341	M02	B	D	E	C	A	C	D	B	A	E	C	B	A	C	E
342	M03	D	D	E	C	A	F	C	C	A	DE	D	B	A	C	ABDF
343	M04	ABD	D	B	B	B	E	C	B	B	D	E	B	A	C	AB
344	M05	AB	D	D	C	A	C	A	B	C	F	C	B	A	C	A
345	M06	B	D	D	A	B	B	C	A	C	D	F	A	A	C	A
346	M07	B	A	D	D	D	F	C	C	A	E	B	B	D	A	A
347	M08	C	B	D	B	B	D	C	B	C	D	C	B	A	C	A
348	M09	B	B	D	B	B	C	C	B	C	D	B	B	A	B	B
349	M10	B	A	E	C	B	C	C	C	A	D	E	B	A	C	F
350	M11	C	C	B	C	B	C	C	B	A	D	C	B	A	C	F
351	M12	B	C	E	C	C	D	C	C	D	D	A	B	A	A	B
352	M13	AB	A	E		C	D	B	A	E	D	C	B	A	A	A
353	M14	B	A	E	D	A	D	C	D	D	ABCDEF	ACDEF	B	A	A	A
354	M15	B	D	B	C	B	C	B	C	C	D	C	B	A	A	A
355	Y01	B	D	E	C	A	D	C	B	C	B	C	B	C	B	A
356	Y02	B	C	D	B	A	E	C	B	C	D	D	B	A	B	E
357	Y03	B	A	D	C	A	A	C	B	C	D	C	B	C	A	A
358	Y04	C	C	B	C	B	C	C	B	A	B	C	B	B	A	A
359	Y05	B	D	B	D	B	D	C	B	C	B	C	B	A	A	A

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
A	37	31	4	30	235	7	35	35	120	12	12	39	258	195	269
B	284	67	66	114	99	34	32	198	19	71	15	312	39	20	34
C	13	57	4	129	18	174	289	112	186	7	198	0	33	141	16
D	40	208	184	84	8	83	2	10	21	246	79	0	33	7	28
E	0	0	96	0	0	28	0	1	14	59	54	0	0	0	23
F	0	0	0	0	0	30	0	0	0	23	50	0	0	0	41
G	0	0	0	0	0	0	0	0	0	2	4	0	0	0	3
TOTALS	374	363	354	357	360	356	358	356	360	420	412	351	363	363	414

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
A	9.89%	8.54%	1.13%	8.40%	65.28%	1.97%	9.78%	9.83%	33.33%	2.86%	2.91%	11.11%	71.07%	53.72%	64.98%
B	75.94%	18.46%	18.64%	31.93%	27.50%	9.55%	8.94%	55.62%	5.28%	16.90%	3.64%	88.89%	10.74%	5.51%	8.21%
C	3.48%	15.70%	1.13%	36.13%	5.00%	48.88%	80.73%	31.46%	51.67%	1.67%	48.06%	0.00%	9.09%	38.84%	3.86%
D	10.70%	57.30%	51.98%	23.53%	2.22%	23.31%	0.56%	2.81%	5.83%	58.57%	19.17%	0.00%	9.09%	1.93%	6.76%
E	0.00%	0.00%	27.12%	0.00%	0.00%	7.87%	0.00%	0.28%	3.89%	14.05%	13.11%	0.00%	0.00%	0.00%	5.56%
F	0.00%	0.00%	0.00%	0.00%	0.00%	8.43%	0.00%	0.00%	0.00%	5.48%	12.14%	0.00%	0.00%	0.00%	9.90%
G	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.48%	0.97%	0.00%	0.00%	0.00%	0.72%

DBASE12 Questionnaire Section B

ID	File	16 1	16 2	16 3	16 4	16 5	17 1	17 2	17 3	17 4	17 5	18 1	18 2	18 3	18 4	18 5	19 1	19 2	19 3	19 4	19 5	20 1	20 2	20 3	20 4	20 5	21 1	21 2	21 3	21 4	21 5	22 1	22 2	22 3	22 4	22 5	23 1	23 2	23 3	23 4	23 5
320	O13				Yes					Yes			Yes					Yes							Yes			Yes			Yes						Yes			
321	O14				Yes					Yes				Yes			Yes								Yes				Yes			Yes							Yes	
322	O15				Yes						Yes		Yes					Yes					Yes							Yes		Yes							Yes	
323	O16					Yes				Yes					Yes			Yes						Yes						Yes							Yes			
324	O17					Yes					Yes		Yes					Yes					Yes				Yes						Yes						Yes	
325	O18				Yes					Yes						Yes		Yes							Yes				Yes			Yes							Yes	
326	O19					Yes					Yes				Yes					Yes				Yes			Yes						Yes							Yes
327	S01				Yes						Yes		Yes					Yes							Yes		Yes						Yes						Yes	
328	S02				Yes					Yes			Yes					Yes								Yes				Yes			Yes						Yes	
329	S03		Yes								Yes					Yes					Yes			Yes						Yes		Yes								
330	S04					Yes					Yes					Yes		Yes							Yes		Yes					Yes								
331	S05					Yes					Yes			Yes						Yes						Yes		Yes				Yes								Yes
332	S06			Yes						Yes				Yes				Yes					Yes						Yes			Yes								
333	S07		Yes					Yes					Yes							Yes					Yes			Yes				Yes							Yes	
334	S08			Yes							Yes				Yes			Yes								Yes				Yes			Yes							Yes	
335	S09			Yes							Yes		Yes					Yes							Yes			Yes				Yes						Yes		
336	S10					Yes					Yes				Yes					Yes						Yes						Yes							Yes	
337	S11			Yes							Yes		Yes						Yes					Yes			Yes								Yes				Yes	
338	S12				Yes			Yes					Yes					Yes							Yes		Yes					Yes						Yes		
339	S13					Yes					Yes				Yes			Yes							Yes			Yes				Yes							Yes	
340	M01				Yes					Yes			Yes						Yes						Yes					Yes	Yes									Yes
341	M02					Yes					Yes		Yes					Yes						Yes			Yes					Yes							Yes	
342	M03		Yes								Yes			Yes				Yes							Yes		Yes				Yes						Yes			
343	M04				Yes						Yes		Yes					Yes							Yes				Yes			Yes							Yes	
344	M05				Yes						Yes	Yes					Yes									Yes				Yes	Yes	Yes								Yes
345	M06				Yes			Yes						Yes				Yes						Yes						Yes									Yes	
346	M07		Yes							Yes					Yes					Yes						Yes					Yes	Yes					Yes			
347	M08				Yes						Yes				Yes			Yes							Yes					Yes		Yes							Yes	
348	M09				Yes					Yes			Yes						Yes						Yes			Yes				Yes						Yes		
349	M10				Yes					Yes			Yes					Yes								Yes		Yes				Yes							Yes	
350	M11		Yes							Yes				Yes				Yes						Yes					Yes			Yes							Yes	
351	M12				Yes						Yes		Yes					Yes							Yes				Yes			Yes							Yes	
352	M13				Yes						Yes				Yes			Yes							Yes			Yes				Yes						Yes		
353	M14	Yes									Yes	Yes						Yes						Yes				Yes			Yes							Yes		
354	M15			Yes							Yes		Yes					Yes						Yes					Yes			Yes								
355	Y01					Yes					Yes		Yes					Yes							Yes			Yes				Yes								
356	Y02				Yes						Yes		Yes					Yes								Yes				Yes			Yes								Yes
357	Y03		Yes							Yes			Yes					Yes						Yes				Yes				Yes								
358	Y04					Yes					Yes		Yes					Yes							Yes					Yes			Yes							
359	Y05					Yes					Yes		Yes				Yes									Yes				Yes		Yes								
TOTALS		8	36	49	154	110	0	11	8	93	245	21	155	50	97	36	46	263	16	24	10	0	28	47	180	104	0	83	89	141	46	145	198	8	7	1	0	150	57	102	50

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SectionCjan01 DBASE12 Questionnaire Sheet: Totals

Total responses by choice

Responses to Questions

		24a	24b	24c	24d	24e	24f	24g
355	1	221	26	19	31	51	6	1
24 347	2	48	33	49	145	38	34	0
336	3	30	81	68	54	41	59	3
Total responses by a, b, c etc		299	140	136	230	130	99	4

		25a	25b	25c	25d	25e	25f	25g
357	1	180	6	5	66	7	91	2
25 347	2	67	52	23	105	32	67	1
341	3	75	82	11	96	16	59	2
Total responses by a, b, c etc		322	140	39	267	55	217	5

		26a	26b	26c	26d	26e	26f
353	1	22	120	56	142	12	1
26 338	2	9	84	139	36	70	0
328	3	2	40	75	29	178	4
Total responses by a, b, c etc		33	244	270	207	260	5

		27a	27b	27c	27d	27e	27f	27g	27h
356	1	52	99	12	32	96	9	56	0
27 336	2	46	40	23	56	122	24	24	1
319	3	26	22	11	53	67	124	12	4
Total responses by a, b, c etc		124	161	46	141	285	157	92	5

		28a	28b	28c	28d	28e	28f	28g
353	1	39	102	54	96	57	4	1
28 333	2	20	53	69	68	107	11	5
315	3	37	23	20	25	27	165	18
Total responses by a, b, c etc		96	178	143	189	191	180	24

		29a	29b	29c	29d	29e	29f	29g	29h
354	1	128	139	59	15	5	7	1	0
29 346	2	66	94	84	62	22	16	2	0
342	3	15	15	51	100	84	12	62	3
Total responses by a, b, c etc		209	248	194	177	111	35	65	3

		30a	30b	30c	30d	30e	30f	30g
353	1	88	158	35	58	5	8	1
30 343	2	63	128	48	92	3	9	0
319	3	102	31	39	100	12	31	4
Total responses by a, b, c etc		253	317	122	250	20	48	5

		31a	31b	31c	31d	31e	31f	31g	31h
354	1	259	15	2	7	3	10	55	3
31 333	2	57	56	6	13	34	19	147	1
307	3	24	80	1	27	69	39	66	1
Total responses by a, b, c etc		340	151	9	47	106	68	268	5

Percentage choices

		24a	24b	24c	24d	24e	24f	24g
	1	62.25%	7.32%	5.35%	8.73%	14.37%	1.69%	0.28%
	2	13.83%	9.51%	14.12%	41.79%	10.95%	9.80%	0.00%
	3	8.93%	24.11%	20.24%	16.07%	12.20%	17.56%	0.89%

		25a	25b	25c	25d	25e	25f	25g
	1	50.42%	1.68%	1.40%	18.49%	1.96%	25.49%	0.56%
	2	19.31%	14.99%	6.63%	30.26%	9.22%	19.31%	0.29%
	3	21.99%	24.05%	3.23%	28.15%	4.69%	17.30%	0.59%

		26a	26b	26c	26d	26e	26f
	1	6.23%	33.99%	15.86%	40.23%	3.40%	0.28%
	2	2.66%	24.85%	41.12%	10.65%	20.71%	0.00%
	3	0.61%	12.20%	22.87%	8.84%	54.27%	1.22%

		27a	27b	27c	27d	27e	27f	27g	27h
	1	14.61%	27.81%	3.37%	8.99%	26.97%	2.53%	15.73%	0.00%
	2	13.69%	11.90%	6.85%	16.67%	36.31%	7.14%	7.14%	0.30%
	3	8.15%	6.90%	3.45%	16.61%	21.00%	38.87%	3.76%	1.25%

		28a	28b	28c	28d	28e	28f	28g
	1	11.05%	28.90%	15.30%	27.20%	16.15%	1.13%	0.28%
	2	6.01%	15.92%	20.72%	20.42%	32.13%	3.30%	1.50%
	3	11.75%	7.30%	6.35%	7.94%	8.57%	52.38%	5.71%

		29a	29b	29c	29d	29e	29f	29g	29h
	1	36.16%	39.27%	16.67%	4.24%	1.41%	1.98%	0.28%	0.00%
	2	19.08%	27.17%	24.28%	17.92%	6.36%	4.62%	0.58%	0.00%
	3	4.39%	4.39%	14.91%	29.24%	24.56%	3.51%	18.13%	0.88%

		30a	30b	30c	30d	30e	30f	30g
	1	24.93%	44.76%	9.92%	16.43%	1.42%	2.27%	0.28%
	2	18.37%	37.32%	13.99%	26.82%	0.87%	2.62%	0.00%
	3	31.97%	9.72%	12.23%	31.35%	3.76%	9.72%	1.25%

		31a	31b	31c	31d	31e	31f	31g	31h
	1	73.16%	4.24%	0.56%	1.98%	0.85%	2.82%	15.54%	0.85%
	2	17.12%	16.82%	1.80%	3.90%	10.21%	5.71%	44.14%	0.30%
	3	7.82%	26.06%	0 33%	8.79%	22.48%	12.70%	21.50%	0.33%

Responses to Questions with weighting calculated

		24a	24b	24c	24d	24e	24f	24g
	1(x3)	663	78	57	93	153	18	3
24	2(x2)	96	66	98	290	76	68	0
	3(x1)	30	81	68	54	41	59	3
Total points		789	225	223	437	270	145	6

		25a	25b	25c	25d	25e	25f	25g
	1	540	18	15	198	21	273	6
25	2	134	104	46	210	64	134	2
	3	75	82	11	96	16	59	2
Total points		749	204	72	504	101	466	10

		26a	26b	26c	26d	26e	26f
	1	66	360	168	426	36	3
26	2	18	168	278	72	140	0
	3	2	40	75	29	178	4
Total points		86	568	521	527	354	7

		27a	27b	27c	27d	27e	27f	27g	27h
	1	156	297	36	96	288	27	168	0
27	2	92	80	46	112	244	48	48	2
	3	26	22	11	53	67	124	12	4
Total points		274	399	93	261	599	199	228	6

		28a	28b	28c	28d	28e	28f	28g
	1	117	306	162	288	171	12	3
28	2	40	106	138	136	214	22	10
	3	37	23	20	25	27	165	18
Total points		194	435	320	449	412	199	31

		29a	29b	29c	29d	29e	29f	29g	29h
	1	384	417	177	45	15	21	3	0
29	2	132	188	168	124	44	32	4	0
	3	15	15	51	100	84	12	62	3
Total points		531	620	396	269	143	65	69	3

		30a	30b	30c	30d	30e	30f	30g
	1	264	474	105	174	15	24	3
30	2	126	256	96	184	6	18	0
	3	102	31	39	100	12	31	4
Total points		492	761	240	458	33	73	7

		31a	31b	31c	31d	31e	31f	31g	31h
	1	777	45	6	21	9	30	165	9
31	2	114	112	12	26	68	38	294	2
	3	24	80	1	27	69	39	66	1
Total points		915	237	19	74	146	107	525	12

Appendix 10

Stage 2 Questionnaire - Data Analysis

Teacher questionnaire - ANALYSIS (E d D - P R 0 9)

Section A - GENERAL

1 What do you think has been the biggest influence on the way you teach?

		Total responses to question	374
		No responses	%
a.	The way I was taught myself at school	37	9.89
b.	I was taught to teach in college	284	75.94
c.	The other teachers in the school where I work	13	3.48
d.	Other	40	10.70

2 Do you think that most people in Kenya think that children..

		Total responses to question	363
		No responses	%
a.	are young adults	31	8.54
b.	should be seen and not heard	67	18.46
c.	are all individuals	57	15.70
d.	are our future leaders	208	57.30

3 Do you agree that the teacher needs to do most of the classroom talking?

		Total responses to question	354
		No responses	%
a.	Strongly agree	4	1.13
b.	Generally agree	66	18.64
c.	Not sure	4	1.13
d.	Disagree	184	51.98
e.	Disagree strongly	96	27.12

4 In your lessons how much do pupils talk to each other about their work?

		Total responses to question	357
		No responses	%
a.	A lot (at least 3/4 of the time)	30	8.40
b.	Sometimes (around 1/2 the time)	114	31.93
c.	Not too much (around 1/4 of the time)	129	36.13
d.	Very little	84	23.53

5 Do you encourage the pupils in your class to talk to each other about their work using Mother tongue?

		Total responses to question	360
		No responses	%
a.	No	235	65.28
b.	Sometimes	99	27.50
c.	Yes	18	5.00
d.	Other	8	2.22

6 When pupils talk to each other when they are working do you feel....

		Total responses to question	356
		No responses	%
a.	angry	7	1.97
b.	that it is becoming undisciplined	34	9.55
c.	that they are not concentrating	174	48.88
d.	pleased	83	23.31
e.	a bit unsure	28	7.87
f.	not in control	30	8.43

Teacher questionnaire - ANALYSIS (E d D - P R 0 9)

7 Do you think all pupils in a class should be doing the same tasks at the same time?

		Total responses to question	358
		No. responses	%
a.	Yes all the time	35	9.78
b.	Usually	32	8.94
c.	No, not all the time	289	80.73
d.	Other comment	2	0.56

8 Do the pupils in your class do their work together?

		Total responses to question	356
		No. responses	%
a.	Often (80% of the lesson)	35	9.83
b.	Sometimes (60%)	198	55.62
c.	Not very often (40%)	112	31.46
d.	Hardly ever (20%)	10	2.81
e.	Never	1	0.28

9 What do you think is the main disadvantage of children working together?

		Total responses to question	360
		No. responses	%
a.	They copy each other	120	33.33
b.	They work more slowly	19	5.28
c.	The teacher cannot tell if the pupils understand	186	51.67
d.	It is noisy	21	5.83
e.	Other	14	3.89

0 What do you think is the main advantage of children working together?

		Total responses to question	420
		No. responses	%
a.	The teacher does not have to do all talking	12	2.86
b.	They can share any books or resources	71	16.90
c.	They enjoy it	7	1.67
d.	They can learn from each other	246	58.57
e.	The clever ones can help the less clever	59	14.05
f.	They can develop their language skills	23	5.48
g.	Other	2	0.48

1 What do you think on the whole is your role as a teacher?

		Total responses to question	412
		No. responses	%
a.	To cover the curriculum	12	2.91
b.	To prepare pupils for KCPE	15	3.64
c.	To help the pupils become responsible adults	198	48.06
d.	To guide pupils in their learning	79	19.17
e.	To help develop pupils' thinking skills	54	13.11
f.	To develop pupils' interest in learning	50	12.14
g.	Other	4	0.97

2 Do you generally use the same teaching approaches for teaching English, Maths and Science?

		Total responses to question	351
		No. responses	%
a.	Yes	39	11.11
b.	No	312	88.89

Teacher questionnaire - ANALYSIS (E d D - P R 0 9)

3 Which core subject do you think requires the most talk by the teacher?

	Total responses to question	363
	No responses	%
a. English	258	71.07
b. Maths	39	10.74
c. Science	33	9.09
d. Other - please give	33	9.09

4 Which core subject do you think requires the most talk by the pupils?

	Total responses to question	363
	No responses	%
a. English	195	53.72
b. Maths	20	5.51
c. Science	141	38.84
d. Other - please comment	7	1.93

5 The kind of questions I ask most in class are....

	Total responses to question	414
	No responses	%
a. to check the pupils' understanding	269	64.98
b. to revise the topic	34	8.21
c. as a starting point for a topic	16	3.86
d. to find out what the pupils think	28	6.76
e. to make sure they are listening	23	5.56
f. to keep them motivated	41	9.90
g. Other	3	0.72

Section B - TEACHER INITIATION

6 How much of the lesson time do you ask the questions?

	Total responses to question	357
	No responses	%
1 Very little	8	2.24
2 Little	36	10.08
3 Half the time	49	13.73
4 Often	154	43.14
5 Most of the time	110	30.81

7 How many of the questions which you ask do you know the answer to?

	Total responses to question	357
	No responses	%
1 None	0	0.00
2 A few	11	3.08
3 Half of them	8	2.24
4 A lot	93	26.05
5 All	245	68.63

Teacher questionnaire - ANALYSIS (E d D - P R 0 9)

8 How many of the questions which you ask require pupils to finish a sentence?

	Total responses to question	359
	No response	
1 None	21	5.85
2 A few	155	43.18
3 Half of them	50	13.93
4 A lot	97	27.02
5 All	36	10.03

9 How many of the questions which you ask require pupils to give a yes or no answer?

	Total responses to question	359
	No response	
1 None	46	12.81
2 A few	263	73.26
3 Half of them	16	4.46
4 A lot	24	6.69
5 All	10	2.79

0 How many of the questions which you ask are to check on what the children have understood?

	Total responses to question	359
	No response	
1 None	0	0.00
2 A few	28	7.80
3 Half of them	47	13.09
4 A lot	180	50.14
5 All	104	28.97

1 How many of the questions which you ask encourage the pupils to explain their thinking?

	Total responses to question	359
	No response	
1 None	0	0.00
2 A few	83	23.12
3 Half of them	89	24.79
4 A lot	141	39.28
5 All	46	12.81

2 How many of the questions which you ask require the class to answer in chorus?

	Total responses to question	359
	No response	
1 None	145	40.39
2 A few	198	55.15
3 Half of them	8	2.23
4 A lot	7	1.95
5 All	1	0.28

3 How many of the questions which you ask are to revise a topic?

	Total responses to question	359
	No response	
1 None	0	0.00
2 A few	150	41.78
3 Half of them	57	15.88
4 A lot	102	28.41
5 All	50	13.93

Teacher questionnaire - ANALYSIS (E d D - P R 0 9)

Section C - TEACHER EVALUATION

*Points are weighting of 1st choice x 3
2nd x 2, 3rd x 1 added together

Mostly pupils in my class talk....

		Total responses to question		355
		No. 1st choices	% of total	Points*
a.	in response to my questions	221	62.25	789
b.	to their classmates about their work	26	7.32	225
c.	to their classmates to borrow equipment/clarify	19	5.35	223
d.	to ask me a question	31	8.73	437
e.	to the pupil sitting next to them	51	14.37	270
f.	to the whole class to explain something	6	1.69	145
g.	Other	1	0.28	6

When I have asked a question I generally select a pupil....

		Total responses to question		357
		No. 1st choices	% of total	Points*
a.	who has their hand up	180	50.42	749
b.	who doesn't have their hand up up	6	1.68	204
c.	who is calling out	5	1.40	72
d.	who is not paying attention	66	18.49	504
e.	in relation to gender, that is girl boy girl boy	7	1.96	101
f.	at random	91	25.49	466
g.	Other	2	0.56	10

When a pupil gives a right answer I usually first of all....

		Total responses to question		353
		No. 1st choices	% of total	Points*
a.	nod	22	6.23	86
b.	say Yes	120	33.99	568
c.	praise the pupil	56	15.86	521
d.	ask the class if the child is right	142	40.23	527
e.	ask the class to give the child a clap	12	3.40	354
f.	Other	1	0.28	7

If the pupil is right I am then most likely to...

		Total responses to question		356
		No. 1st choices	% of total	Points*
a.	rephrase the answer the child has given	52	14.61	274
b.	repeat their answer	99	27.81	399
c.	ask the same child a probing question	12	3.37	93
d.	try to find out more about pupil's understanding	32	8.99	261
e.	elaborate on their answer	96	26.97	599
f.	continue with the lesson	9	2.53	199
g.	ask the class if she/he is right	56	15.73	228
h.	Other	0	0.00	6

When a pupil gives the wrong answer I generally....

		Total responses to question		353
		No. 1st choices	% of total	Points*
a.	tell them it is wrong	39	11.05	194
b.	repeat the question to the same pupil	102	28.90	435
c.	rephrase the question to the same pupil	54	15.30	320
d.	ask the class if she/he is right	96	27.20	449
e.	rephrase the question to the same pupil	57	16.15	412
f.	give them the right answer	4	1.13	199
g.	Other	1	0.28	31

Teacher questionnaire - ANALYSIS (E d D - P R 0 9)

If I ask a pupil a question and they don't say anything I usually....

		Total responses to question		354
		No. 1st choices	% of total	Points*
a.	wait for a few seconds	128	36.16	**531**
b.	repeat the question	139	39.27	**620**
c.	rephrase the question	59	16.67	**396**
d.	ask another pupil the same question	15	4.24	**269**
e.	ask the class	5	1.41	**143**
f.	wait for more than a few seconds	7	1.98	**65**
g.	give the right answer myself	1	0.28	**69**
h.	Other	0	0.00	**3**

I would like to do much more...

		Total responses to question		353
		No. 1st choices	% of total	Points*
a.	whole class discussion	88	24.93	**492**
b.	group work	158	44.76	**761**
c.	paired work	35	9.92	**240**
d.	project work - in/out of class	58	16.43	**458**
e.	peer teaching	5	1.42	**33**
f.	team teaching	8	2.27	**73**
g.	Other	1	0.28	**7**

I feel I can't always teach the way I want to because...

		Total responses to question		354
		No. 1st choices	% of total	Points*
a.	the curriculum is overloaded	259	73.16	**915**
b.	the exams are so important	15	4.24	**237**
c.	the Headteacher would disapprove	2	0.56	**19**
d.	Inspectors/MoE officers would disapprove	7	1.98	**74**
e.	of the difficulties of teaching in English	3	0.85	**146**
f.	the pupils are not clever enough	10	2.82	**107**
g.	I haven't got the resources	55	15.54	**525**
h.	Other	3	0.85	**12**

Appendix 11

Stage 2 Questionnaire - Analysis of Teachers Comments

Stage 2 Questionnaire - Analysis of Teachers Comments

QUESTIONS 1 D.

F 14 – The presence 6:4:4 dystens.
F 7 – We have to change with time for improvement.
J 1 – Environment very hostile.
P 3 – Through experience.
P 4 – Through experience.
P 5 – Through experience.
P 6 – Through experience.
D 9 – Enjoying my career along experience.
D 11 – Enjoying in my career hard work.
D 16 – The way i enjoy my work experience.
W 6 – The Communatry with where reach.
W 9 – Combination of 'B' and 'C'.
W 21 – The learning needs of eacit child.
L 6 – Pupils average ability.
L 11 – Godly call teaching is a caling in me.
X 13 – Intluence from pupils at differect levels other teachers interaction experien of teaching reacing widely.
X 15 – Experience in my teaching duration.
X 16 – Experience is attaied all nuere yrs.
X 17 – Experience.
B 18 – Enviironment pupils back ground be haviouring Pupils interest towards teaching.
B 19 – The back gruund of the children.
R 21 – Experience.
R 22 – Experience.
R 23 – Experience.
N 3 – Im driven by the diffeulties or Individual needs situation of the duldren at that partical time.
U 9 – Due to experience.
U 10 – Experience.
U 11 – Experience.
U 12 – Due to expaience.
T 2 – As per inspecters instuction.
N 8 – Due to lack of facilities. – environment
G 6 – Research from latest information books projects etc
G 8 – As stated in B and my own effarts. Experience

Stage 2 Questionnaire · Analysis of Teachers Comments

QUESTIONS 1 D. ①

B 2 — Environment and management.
A 10 — Reading research
H 3 — The love for children.
H 10 — Seminars.
H 11 — Seminars courees.
H 13 — Seminars courees.
H 14 — Seminars courees.
H 17 — Other caused like e.g Monitoring poredy like education.
J 6 — I like it from god.
J 8 — The pupils participation
J 10 — God's inspirations.
O 10 — Lack of text books
O 11 — Number of subjects.
S 4 — Lack of resources.
S 10 — Experience.
S 12 — By arquiring from of ther teachers and great leaders.
M 4 — Discoveries from resource books as I do research.
M 7 — Because there is no time for them to talk and for teaching and the work to be coused is a lot.
M 13 — I only allow them 5 minutes after aquiring languages and in Art and Craft they talk as the work very freely.

Experience (21) 1 3 3 / 4 3 4 / 1 11

Lack of resources (3) 111

Individual Learning needs (5) HHT

Seminars 4 (4)

Research 111 (3)

The system 1111 (4)

~~Hostite~~ Envi 111 / 11 (5)

Appendix 12

Stage 2 Classroom Observation - Data Analysis of Individual Lesson

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	PS	Q	M	RQ	xYes
1	1				Yes						0	Yes			2
2	4	Yes			Yes						0	Yes			3
3	7	Yes									0	Yes			2
4	9	Yes									0	Yes			2
5	11				Yes						0	Yes			2
6	13										0			Yes	1
7	15	Yes			Yes						0	Yes			3
8	19	Yes			Yes						0	Yes			3
9	21	Yes			Yes						0				2
10	23										0	Yes			1
11	25										0			Yes	1
12	27	Yes			Yes						0	Yes			3
13	33				Yes		Yes				1				2
14	36	Yes			Yes						0	Yes			3
15	39	Yes			Yes		Yes				1				3
16	47	Yes							Yes		1				2
17	51				Yes					Yes	1				2
18	55				Yes		Yes				1				2
19	57	Yes			Yes						0	Yes			3
20	60	Yes			Yes	Yes					0				3
21	67					Yes					0				1
22	69						Yes				1				1
23	71							Yes			1				1
24	73	Yes			Yes						0	Yes			3
25	76	Yes			Yes				Yes		1				3
26	79								Yes		1				1
27	81				Yes		Yes				1				2
28	83				Yes						0	Yes			2
29	85	Yes									0	Yes			2
30	87	Yes			Yes						0	Yes			3
31	92	Yes	Yes		Yes		Yes				1				4
32	98					Yes					0				1
33	100										0		Yes		1
34	103					Yes					0				1
35	105					Yes					0				1
36	107					Yes					0				1
37	109					Yes					0				1
38	111					Yes					0				1
39	114				Yes				Yes		1				2
40	116										0	Yes			1
41	118						Yes				1				1
42	120	Yes									0	Yes			2
43	122										0			Yes	1
44	124										0		Yes		1
45	127	Yes									0				1
46	129										0		Yes		1
47	131	Yes									0	Yes			2
48	133	Yes	Yes						Yes		1				3
49	135										0	Yes			1
50	137										0			Yes	1
51	139										0		Yes		1
52	142				Yes						0	Yes			2
53	144										0		Yes		1
54	147				Yes					Yes	1				2
55	149							Yes			1				1

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	PS	Q	M	RQ	xYes	
56	151							Yes			1				1	
57	153	Yes				Yes					0				2	
58	160				Yes						0	Yes			2	
59	164				Yes				Yes		1				2	
60	167				Yes						0				1	
61	169				Yes						0	Yes			2	
62	172										0	Yes		Yes	2	
63	174		Yes		Yes						0				2	
64	176	Yes									0				1	
65	178					Yes					0				1	
66	180										0		Yes		1	
67	182		Yes		Yes				Yes		1				3	
68	186								Yes		1	Yes			2	
69	189										0	Yes			1	
70	191										0			Yes	1	
71	193										0		Yes		1	
72	196				Yes				Yes		1				2	
73	198				Yes				Yes		1				2	
74	200				Yes				Yes		1				2	
75	203										0		Yes		1	
76	205										0		Yes		1	
77	207										0		Yes		1	
78	209				Yes						0	Yes			2	
79	211								Yes		1				1	
80	216				Yes				Yes		1				2	
81	218				Yes				Yes		1				2	
82	221				Yes						0	Yes			2	
83	223										0	Yes			1	
84	226								Yes		1				1	
85	228		Yes		Yes						0	Yes			3	
86	232										0			Yes	1	
87	234				Yes				Yes		1				2	
88	236				Yes				Yes		1				2	
89	238				Yes						0	Yes			2	
90	240										0	Yes			1	
91	242										0	Yes			1	
92	244										0	Yes			1	
93	246										0	Yes			1	
94	249				Yes		Yes				1				2	
95	255				Yes	Yes					0				2	
96	257					Yes					0				1	
ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	PS	Q	M	RQ	xYes	
		23	5	0	42	12	8	3	17	2	30	34	10	7		
															45	Yes x 1
															36	Yes x 2
															14	Yes x 3
															1	Yes x 4

Appendix 13

Stage 2 Classroom Observation - Data Analysis of Combination Discourse Strategies

ENGLISH

Access97 database - filtered for E (explanation) with PS (DR, DC, DYN, DRC)

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
2	4				Yes			Yes					
119	238				Yes		Yes						
134	278				Yes				Yes				
146	308				Yes				Yes				
165	351				Yes					Yes			

1 Baba Dogo English

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
2	4				Yes					Yes			
16	34				Yes				Yes				
65	148				Yes				Yes				
78	182				Yes		Yes						
81	191				Yes					Yes			
89	213				Yes		Yes						
90	217				Yes				Yes				
91	221				Yes		Yes						
107	264				Yes		Yes						
114	283				Yes				Yes				

2 Baba Dogo English

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
84	208				Yes					Yes			
92	229	Yes			Yes			Yes					
94	233				Yes		Yes						
98	242	Yes			Yes				Yes				
102	252				Yes		Yes						
112	276	Yes			Yes		Yes						
115	284				Yes		Yes						
117	292				Yes		Yes						
128	317				Yes		Yes						
138	339				Yes					Yes			
139	342				Yes					Yes			
140	346				Yes				Yes				
141	349				Yes		Yes						
142	351				Yes		Yes						
143	353				Yes		Yes						
145	358	Yes			Yes					Yes			
149	370				Yes		Yes						

3 Baba Dogo English

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
14	27	Yes			Yes					Yes			
63	128				Yes			Yes					
67	137				Yes			Yes					
99	202	Yes			Yes			Yes					
125	256				Yes		Yes						
126	260				Yes		Yes						
139	287				Yes					Yes			

10 Kariobangi English

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
82	173	Yes			Yes				Yes				
97	204				Yes				Yes				
119	250	Yes			Yes					Yes			

13 Olepolos English

ID	Line No	RA	P	TC	IE	I	DC	DR	DYN	DRC	Q	M	RQ
61	130				Yes			Yes					
169	356				Yes			Yes					
272	564				Yes			Yes					
299	621				Yes			Yes					

16 Oletanyi English

ID	Line No	RA	P	TC	IE	I	DC	DR	DYN	DRC	Q	M	RQ
23	53				Yes				Yes				
24	58				Yes				Yes				
25	61				Yes		Yes						
28	68				Yes				Yes				
33	85				Yes				Yes				
35	102				Yes				Yes				
36	105				Yes				Yes				
37	107				Yes		Yes						
41	115	Yes			Yes				Yes				
42	118				Yes					Yes			
61	160				Yes		Yes						
63	164				Yes		Yes						
64	167	Yes			Yes				Yes				
93	232				Yes				Yes				
104	256				Yes				Yes				
105	258				Yes		Yes						

18 Ushrika English

MATHS

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
25	61				Yes					Yes			
40	99	Yes			Yes				Yes				
47	115	Yes			Yes				Yes				
58	142	Yes			Yes		Yes						
63	157				Yes				Yes				
66	165				Yes		Yes						
67	168				Yes			Yes					
72	178	Yes			Yes				Yes				
77	194		Yes		Yes		Yes						
78	197	Yes			Yes		Yes						
85	221				Yes				Yes				
88	230	Yes			Yes		Yes						
92	239	Yes			Yes		Yes						
93	242	Yes			Yes		Yes						
106	272				Yes		Yes						

4 Baba Dogo Maths

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
1	4				Yes				Yes				
2	9				Yes		Yes						
7	21				Yes				Yes				
8	24				Yes		Yes						
9	27				Yes				Yes				
11	32				Yes			Yes					
15	45				Yes				Yes				
27	75	Yes			Yes			Yes					
31	83	Yes			Yes				Yes				
37	98				Yes				Yes				
42	110				Yes				Yes				
55	143				Yes			Yes					
56	145				Yes				Yes				
62	161	Yes			Yes		Yes						
63	166		Yes		Yes			Yes					
75	195				Yes	Yes		Yes					
77	206				Yes				Yes				
87	240				Yes				Yes				
89	249				Yes				Yes				

7 Banana Hill Maths

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
13	33				Yes		Yes						
15	39	Yes			Yes		Yes						
17	51				Yes					Yes			
18	55				Yes		Yes						
26	76	Yes			Yes				Yes				
28	81				Yes		Yes						
32	92	Yes	Yes		Yes		Yes						
40	114				Yes				Yes				
55	147				Yes					Yes			
61	164				Yes				Yes				
69	182		Yes		Yes				Yes				
74	196				Yes				Yes				
75	198				Yes				Yes				
76	200				Yes				Yes				
82	216				Yes				Yes				
83	218				Yes				Yes				
89	234				Yes				Yes				
90	236				Yes				Yes				
96	249				Yes		Yes						

8 Banana Hill Maths

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
2	3				Yes					Yes			
12	31	Yes			Yes					Yes			
15	41				Yes		Yes						
17	46				Yes		Yes						
18	49				Yes					Yes			
21	55				Yes		Yes						
27	74	Yes			Yes					Yes			
30	87	Yes			Yes		Yes						

11 Kariobangi Maths

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
17	34	Yes			Yes					Yes			
21	45	Yes			Yes	Yes				Yes			
22	49				Yes					Yes			
53	117				Yes			Yes					
89	203				Yes		Yes						
97	221				Yes					Yes			
118	266				Yes			Yes					

14 Olepolos Maths

SCIENCE

Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
31				Yes					Yes			
34				Yes			Yes					
39	Yes	Yes		Yes					Yes			
48				Yes					Yes			
49				Yes					Yes			
55	Yes			Yes				Yes				
63	Yes			Yes					Yes			
68				Yes				Yes				
72				Yes					Yes			
74				Yes			Yes					
78				Yes					Yes			
105				Yes				Yes				
108				Yes				Yes				
110				Yes				Yes				
112				Yes				Yes				
115				Yes				Yes				
117				Yes					Yes			
127				Yes					Yes			
130				Yes		Yes						
134				Yes				Yes				
139				Yes					Yes			
166				Yes					Yes			
194				Yes				Yes				
198				Yes					Yes			
227				Yes				Yes				
239				Yes				Yes				
242				Yes					Yes			
261				Yes					Yes			
264				Yes					Yes			
267				Yes					Yes			
270				Yes				Yes				
292				Yes				Yes				
296				Yes			Yes					
299				Yes					Yes			
308				Yes					Yes			
346				Yes				Yes				

5 Baba Dogo Science

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
27	61				Yes				Yes				
28	64				Yes			Yes					
29	68				Yes		Yes						
31	73				Yes				Yes				
52	131				Yes			Yes					
53	136				Yes				Yes				
57	145				Yes				Yes				
58	147				Yes					Yes			
59	149	Yes			Yes			Yes					
61	156				Yes				Yes				

9 Banana Hill Science

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
41	93				Yes				Yes				
54	134				Yes				Yes				
55	136				Yes				Yes				
60	151				Yes		Yes						
61	156				Yes				Yes				
63	164				Yes				Yes				
64	170				Yes				Yes				
93	232	Yes			Yes		Yes						
94	238				Yes				Yes				

12 Kariobangi Science

15 Olepolos Science NO MATCHING RECORDS

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
8	25				Yes		Yes						
21	56				Yes					Yes			
22	58				Yes			Yes					
25	65				Yes		Yes						
26	68				Yes				Yes				
32	80				Yes				Yes				
39	97				Yes				Yes				
40	103				Yes				Yes				
52	128				Yes				Yes				
53	130				Yes				Yes				
58	143				Yes					Yes			
59	148				Yes					Yes			
64	162				Yes		Yes						
66	168				Yes					Yes			
76	205				Yes				Yes				
78	211				Yes				Yes				
80	216				Yes				Yes				
92	249				Yes			Yes					
95	256				Yes				Yes				
96	267				Yes				Yes				

17 Oletanyi Science

ID	Line No	RA	P	TC	E	I	DC	DR	DYN	DRC	Q	M	RQ
8	21	Yes			Yes				Yes				
9	24				Yes				Yes				
10	26				Yes				Yes				
11	29				Yes				Yes				
15	39				Yes				Yes				
20	54				Yes					Yes			
21	59				Yes				Yes				
22	63				Yes				Yes				
27	75				Yes		Yes						
36	96				Yes				Yes				
52	145				Yes		Yes						
57	157				Yes		Yes						
58	159				Yes				Yes				
63	172				Yes				Yes				
71	192				Yes				Yes				

Ushrika 20 Science E + PS